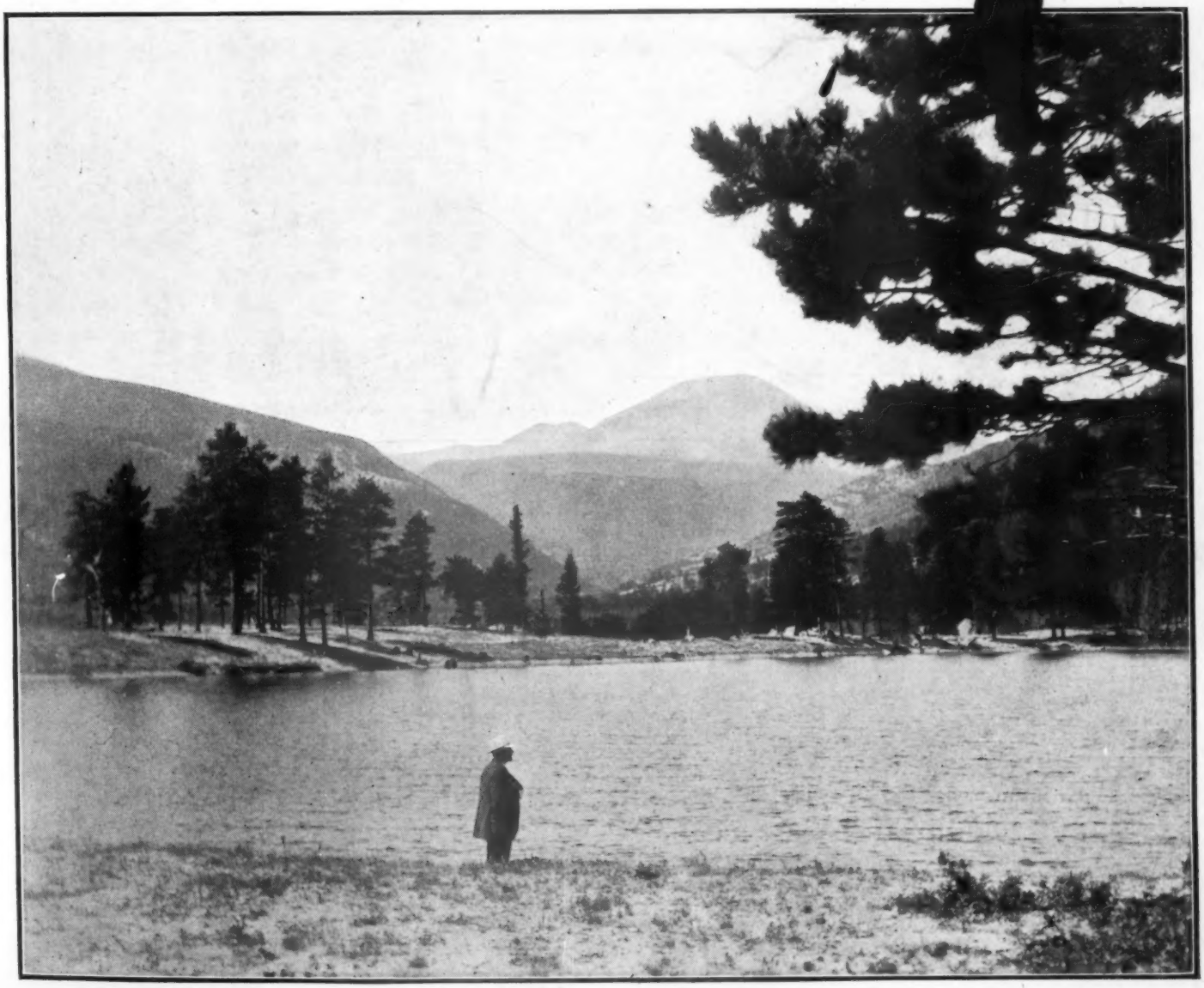
# AMERICAN BEE JOURNAL

NOVEMBER, 1919



A GLIMPSE OF COLORADO MOUNTAIN SCENERY NEAR SPANGLER'S CABIN IN THE ROCKIES

AMERICAN BEE JOURNAL

VOL. LIX—NO. 11 HAMILTON, ILL., NOVEMBER, 1919 MONTHLY, $1.00 A YEAR

# SUCCESS WITH OUTAPARIES

BY M. G. DADANT

WHERE one beekeeper twenty years ago was an outapiarist, probably more than fifty are today. We are apt to lay this to improved methods of beekeeping and to the initiative of the modern beekeeper, who keeps bees for a living, rather than as a side issue. Yet when we look back over the methods of transportation and the difficulties encountered by the successful outapiarist, the wonder is that there were then so many outapiaries. The territory of each apiarist was naturally limited by the distance he was able to travel with a team of horses, and the number of colonies he could keep, by the number he was able to look after with the time at his disposal. Half of the time was used in travel to and from the apiary. The moving of bees was an extraordinary hard job, owing to the danger of stings, with horses, and the long time needed on the road, and hours were long under almost any conditions.

Well do I remember one of my first trips at turning the extractor at one of our outapiaries about twenty years ago. This apiary was only about 5 miles from home, but we were extracting during a dearth of honey, and we were, moreover, using a temporarily vacated dining room of the farmer's house for extracting. This necessitated replacing the supers on the hives at nearly dark. I had gone to the outapiary with our man and the team. By the time extracting was done and the supers returned to the hive, it was after 9 o'clock and the rain had started falling. We still had our wagon to load and the five-mile trip home. Before we had traveled half the distance, the rain was falling in torrents, and by the time we reached the home place we were drenched, and it was nearing midnight. Naturally, my mind did not turn to the possibility of ever having access to territory fifty or more miles away, nor the possibilities of moving bees such a distance to catch an extra crop, and I rather leaned (that evening at least), towards less bees and all kept in the home apiary.

There are several things necessary to make a successful outapiarist, and foremost of these, of course, is a thorough knowledge of beekeeping practice. Necessary as it is to be a beekeeper, rather than a keeper of beehives, for success in the home apiary, it is doubly so for the outapiarist.

He must know what is necessary at the outapiaries at all seasons of the year. In winter, the entrances may become clogged with ice if bees are wintered out-of-doors, or the temperature may be variable in the cellar.

If improperly put into winter quarters there may be spring dwindling. Early examinations will have to be made in the spring to close up dead colonies, and contract the entrances of the weaker ones. When weather permits, more minute examinations of each colony for queens, food store, and disease, will have to be made. Drone-laying colonies and queenless ones should be united to strong colonies, and winter packing removed.

As the crop approaches, the bees should be prepared for it, so as to have a maximum producing force ready for the crop when it arrives. Supering should be done at the right

An outyard in Mississippi river bottoms, property of E. A. Welch, Quincy, Ill.

time to hold down swarming, and entrances of hives should be enlarged according to their strength. The outapiarist must endeavor to allay the swarming impulse, since in the outapiary a larger percentage of swarms would be lost. He must remember, and put into practice, the fundamentals in swarm prevention—young queens, ample breeding and storing room, sufficient ventilation, absence of drone comb.

With the crop will also come further examination for queens and disease. If excluders are to be used, the beekeeper should combine some definite system with their use or he is apt to defeat their purpose by restricting too closely the breeding-room of the queen and thereby weaken his colonies.

Following the storing of the crop will come its harvest, with consequent necessity for knowledge of different appliances for extracting and storing and precautions to be taken should there be a honey dearth at extracting. Then one cannot be too careful, if placing escapes, to make all tight above them, guarding against robbing of the unprotected honey. Robbing around the extracting house should be checked as much as possible and sticky supers returned only at the close of the day during the dearth. Unprotected combs should be kept free of moths.

With the middle of summer, colonies should begin to be prepared for the winter rest. There will be necessary, an abundance of stores, plenty of young bees, and sufficient protection can be given later in the fall, and to some extent, the added stores, but the young bees must be raised soon if they are to be in abundance for the winter cluster.

With the fall will come the supplying of stores, should the beekeeper not be fortunate enough to have been sufficiently provided by natural honey-flows. The choice of wintering systems will also have to be made, whether it be cellaring or out-of-door wintering by some approved method, the choice being determined by the variability of the climate in each section of the country and the protection afforded by natural methods, such as windbreaks, etc.

One of J. F. Diemer's outyards in the Missouri River hills, near Liberty, Mo.

In fact, the activities of the wide-awake outapiarist will be a constantly changing panorama, from early spring till his bees are placed for their long winter rest, nor would such efforts be much mitigated by the winter, were he as active in the disposition of his crop as in the harvest. It seems very strange that a beekeeper should devote so many months of the year and so much labor to the preparation for the harvesting of the crop, only to turn around and sell it to the first buyer. I believe the time is fast approaching when marketing will be as truly a part of the honest efforts of the beekeeper as is production. Then the beekeeper will get out and create a market, instead of waiting for the market to be developed from without.

The wise manufacturer first creates a demand for his product, then works to supply his customers. Why should the beekeeper do otherwise, first producing his crop, then later making a more or less feeble effort at selling it?

### Knowledge of Territory

It is imperative that each beekeeper know his territory. He must know the extent of the flora in his section so as to be able to determine how many colonies he may place in each location without overstocking.

But with the elasticity in opportunity for outapiary expansion by means of the automobile and truck, he should do more than this; he should study carefully his territory for 100 miles in each direction. He may, by this same means, place his apiaries to best advantage, and he may, moreover, change locations (migrate) with his bees to an extra crop. An instance of this may be mentioned in the case of the Dadant apiaries during the season just passed. White clover, our main flow, was a failure, and such little as there was, together with sweet clover, was used in making increase. Careful observation showed us, however, that the drought had not affected the growth of weeds in the Mississippi bottoms some distance away. By the aid of two large trucks all of the 700 colonies in these apiaries were moved into the bottom for the added harvest with the result that a haul of forty miles at the most meant an average of from 75 to 100 pounds to the colony instead of a summer

Outapiary at foot of a mountain in California. A variety of forage is within reach of a location like this.

One of Bunger's outyards at Eskridge, Kansas.

dearth, with consequent necessity for liberal feeding to get colonies in condition for the winter.

If possible it is very desirable to get contour maps of your own county and those adjoining, then get in touch with county agents to find out the possibilities. There may be a tract of alsike or sweet clover fifty miles away to which it would pay to move an apiary. The rainfall may vary considerably over a radius of 100 miles, so that there may be a drought in one sector and prodigious rainfall in the other. Migratory beekeeping in days past was uncertain, but not so much now over a distance of 100 miles or less, with the big truck mode of transportation.

Many beekeepers in California practice it, and not only move from one crop to another, but are able, by careful planning, to take advantage of several crops in a single season. The Edson apiaries in Northern California, load 100 colonies at a time on their big four-ton truck and travel from one flow to another. Their apiaries are placed in units of this number of colonies for best results. Some apiarists catch the early flows in California and ship by rail to Nevada or Utah in time for the alfalfa there, to return to California for the fall. But the long overland haul by rail takes much experience and had best not be attempted unless the beekeeper is in a position to stand possible loss.

**Systems of Management**

With special reference to the crop and its harvesting, there are three general systems of management practiced by the best apiarists of today. They are the system with the temporary or portable house, that with the permanent house, and that with the central extracting system. Each has its advantages. Each fits in with conditions applying to individual beekeepers.

Where apiaries are not located permanently for year after year, and conditions not desirable for erecting a well-built, permanent honey-house, very often a small building of temporary structure is provided for housing supers, hives and utensils; the extracting being done in a temporary house made of muslin, screen or some other suitable material, put up at extracting time, to be taken down and removed to the next apiary as soon as the crop is harvested. Many use tents for this, but these are at best a makeshift, since they are hot and difficult to make bee-proof.

Where the apiary can be permanently located, a well-built, permanent house is much better, and it should be made large enough to hold all supers and extra equipment. A house 16x20 feet is not too large. In this a permanent extracting outfit may be located, though the usual rule is to carry the extractor and equipment from apiary to apiary as the work progresses. Such houses may be made sectional, so as to be easily moved in case change of location is desired. Many are made, either with wintering cellar beneath, or with cellar to be used for storage tanks, so that the honey may be piped directly from the extractor and capping can or box.

Very recently, the central extracting plant has met with favor by those who have tried it. With this system, all honey is hauled home to be extracted, and the building is made sufficiently large for the most modern equipment in every particular. Extractors (possibly two or more of them), are run from one shaft, which may also run a honey pump, etc. Steam for heating honey, melting wax and heating the honey knife, as well as for heating water and the rooms of the house, is provided by one boiler. Hot and cold water, a carpenter shop, etc., may be provided.

There are many advantages to this system. Centralization naturally allows of best methods with minimum outlay. Work is done at home under constant supervision and all equipment is at hand where it can be readily cared for. Apiaries may be changed in location with least annoyance.

Yet there may also be disadvantages. If foulbrood is prevalent in the outapiaries, there is danger of spreading the disease by the intermixing of combs. In hot weather, combs of honey may melt while being hauled home, or if it be cool, they may break badly. Sticky supers have to be returned, with consequent robbing. The roads may become muddy and not allow taking off supers when they are ready. If the supers are removed during a honey dearth, robbers will be bad, and by the time

A Colorado outyard.

you have your truck loaded, they may be around you in a swarm.

It would seem better to have a small house at each apiary, in which supers might be stored in case of necessity. It would not need to be large, but should be absolutely bee-tight.

Very few who have tried the central plant would willingly return to their old method. Every man to his conditions, however. A large majority of extracting systems are still run with all extracting done at the outapiaries, and many of them probably more advantageously than with the central extracting house.

**Automobiles and Trucks**

No doubt that the automobile and truck are responsible for most of the improvement in the methods of running outapiaries over what prevailed twenty years ago. Yet the beekeeper should figure costs very carefully before coming to a decision as to what type to use.

The beginner will probably be content with the pleasure car, or one which has been remodeled for his needs. He can accomplish all work except the hauling home of the honey with it. It may pay him to have this work done by hired machines.

Likely the apiarist with three apiaries or less will do well with the converted machine, having his heavy hauling done outside. The beekeeper with five or more apiaries can use the light truck (one ton or less) to advantage, while a system with 1,000 colonies or more may find the big truck of advantage. But in this instance, there will have to be smaller cars for regular apiary work.

Not enough attention to costs is paid by any beekeeper. We know of one or two apiarists who have bought trucks beyond their needs, running their operating costs much higher than if they had chosen a smaller machine.

As in many other branches of beekeeping, the choice will have to be made by the individual beekeeper. Each one should be best able to determine from his system just what is most suitable to his own needs.

## Are We Good Samaritans?

IN the October number, under the above title, we published an appeal to American beekeepers for help for their destitute brothers in Europe. The responses are surely coming. Yes, we are good Samaritans!

We were barely through mailing the last copies of the October number when the first responses came, October 3. Here are the first two letters:

"I have just read your editorial, 'Are we Good Samaritans?' It hit the spot with me. I am sure there are thousands of beekeepers in the United States who want to help the unfortunate beekeepers in France and Belgium and are glad to see you start the ball rolling.

"I am enclosing check for $104. Use $100 as you think best for Franco-Belgian relief and $4 to advance my subscription 5 years. I wish you great success.

"HARRY CRAWFORD,
"Broomfield, Colo."

Second letter:

"I have had a good crop. Can get 25 cents for all my honey at home. Read your proposition to help those beekeepers living in the war zone. A little from our beemen will put them again in the bee business and we will not miss it. I enclose $2, for which they can get some fixtures, frames, etc.

"HERSCHELL FELTON,
"Late Sgt. 1, Co. H., 37th Ill Vol,
"Millersburg, Ill."

These letters are in the right spirit and I was enthused to receive them so quickly. But listen:

Leon Tombu, of Huy, Belgium, formerly president of the International Congress of Beekeepers that met in Brussels in 1910, now secretary of the same organization to meet in Rome in 1920. Mr. Tombu is very active in war relief for the spoliated and homeless beekeepers of Belgium and France.

The very next day I had a visit from Hugh L. Cooper, the great hydraulic engineer who built the big dam across the Mississippi. He was a colonel of engineers in the great war. He helped rebuild and enlarge some seaports in France, and saw the devastation of those countries. As he spoke to me of those matters, I accidentally mentioned the subscription work we had undertaken to help the Franco-Belgian beekeepers. I told him of Harry Crawford's prompt response with $100 subscription. With his customary briskness and wholeheartedness, he quickly interrupted me and said:

"Mr. Dadant, I'll meet that man's subscription." "What, do you really mean to say that you will give us another hundred for the beekeepers of Europe?"

"Exactly, Put my name on the list and I'll send you my check for $100."

Here we are, only a week from the publication of the appeal and our list of help is as follows, in addition to the October subscription:

| | |
|---|---|
| Harry Crawford, Broomfield, Colo. | $100 |
| Herschell Felton, Millersburg, Ill. | 2 |
| Hugh L. Cooper, New York City | 100 |
| Lutz & Stahl, Printers of American Bee Journal | 5 |
| A. A. Augenstein, Dakota, Ill. | 5 |
| M. M. Martin, Caledonia, Ill. | 5 |
| John M. Davis, Spring Hill, Tenn. | 4 doz. queens (Italian) |
| Allen Latham, Norwichtown, Conn. | 25 queens (Italian) |
| G. B. Lewis Co., Watertown, Wis. | $200 in supplies at wholesale |

Do we need more? Yes, certainly. The damages to be paid by Germany wil be insufficient. Looking in any direction, we find statements confirming that view, from entirely disinterested persons.

For instance, Bishop Theodore Henderson, of the Methodist church in Detroit, writes, in "Victory":

"It is understood that the construction of buildings will be done by the French Government, but it is estimated that, even if the maximum reparation money is secured from Germany, there will be no surplus for the villagers to secure kitchen utensils, garden tools, farm implements, household furniture and the like."

The Anglo-American Mission of the Society of Friends sends us an appeal for bees or supplies.

Mr. Leon Tombu, 26, Rue D'Angleterre, Huy, Belgium, who was President of the International Congress of Beekeepers, in Brussels, in 1910, and is now Secretary of the same organization, wrote us several times in view of securing bees or supplies from American beekeepers. He made a trip to Italy, during the summer, to arrange for the shipment of Italian bees to the devastated regions next year. He expects that it may be possible to secure bees, in the spring, from Germany and the Netherlands. He writes us as follows:

"We are very thankful for your proposed help and also for the encouraging letters received from Dr. Phillips, of Washington. I have transmitted a copy of your letter to the Director-General of Belgian Agriculture, who feels very thankful for your efforts. You are right in stating that America is rather distant for us to secure gifts of colonies of bees and receive them in good shape. But if we can get bees elsewhere and supplies or cash from America, we can probably help rebuild, in small part, our destroyed beekeeping."

The French "Commission for Rebuilding Destroyed Apiaries" is securing some help from the unhurt parts of France. It is publishing a subscription list in L'Apiculteur. But when we consider that France has lost as many men as our entire A. E. F. (nearly two million), that 90 per cent of her industries were directed, for at least 4 years, to the making of arms and ammunition, that some of her best land is now a chaos where nothing can be grown, and that her money values have depreciated, we

can easily see that it will take but a small effort on the part of American beekeepers to more than treble the gifts expected.

We are deriving profit from high prices and those high prices are due in great part to the suffering of Europe. If each reader of one of the American bee magazines was to give but 50 cents, it would constitute a liberal donation to Belgium and France, in beekeeping. There is plenty of generosity in this country and it has not reached the limit. Come, friends, let us have your subscription, no matter how small. Large ones accepted. Everything will be acknowledged and a statement published of where the money and supplies go.

We don't expect subscriptions from all our subscribers. But we do know that if they can afford to send a remittance such as they will probably not miss, they will feel great pleasure in having helped. Dollars, in American money, just now, increase in value nearly 60 per cent, when changed for French or Belgian funds. We propose to forward the cash remittances before the European funds regain their value, and we are going to be very careful to secure proper distribution.

## Grading Honey in New Zealand For Export

By I. Hopkins

SOME 25 or more years ago, when our export trade in butter, cheese and meat began to assume fairly large proportions, and promised to expand enormously in the future, provided it was conducted in a straightforward manner, our Government, with commendable foresight, took a hand in it, with the object of preventing, through fraud or carelessness any injury to the growing trade by the export of inferior produce. Legislative measures were passed, regulations formed, and official graders appointed; and none of the commodities mentioned were from that time allowed to be exported without being officially graded and stamped as to grade. The effect of such regulations was that the export trade went ahead with the proverbial leaps and bounds, because it gave confidence to buyers without examination. The Government grade marks were sufficient. Today the annual value of our export trade in butter, cheese and meat is an enormous sum for so small a country.

The foregoing is a brief account of the commencement of our grading system. I may state that practically all our export trade is with Great Britain.

The first honey raised in New Zealand under the modern system of beekeeping, exported to Britain, was raised by myself in 1883, and subsequently, in 1888 and after, I exported considerable quantities of the best quality. This was the means of creating a good name for our honey, which it has retained ever since. In order to preserve the good name it was considered advisable, some years ago, to include honey in the grading system, and in November, 1915, Government grading regulations were gazetted and they became law, since when no honey has left the country ungraded. The confidence of oversea buyers is evidenced by their purchases en route on the Government grade marks. I enclose a copy of our grading regulations, from which you can quote the salient points.

Aukland, New Zealand.

(Our esteemed contributor includes with his letter a copy of the New Zealand grading regulations. These are too lengthy for full insertion, but we pick out the following interesting points:

No honey may be exported until it has been graded. Four different ports are named in which honey may be graded and the location given where the grading is done. The honey must be divided into uniform classes, with distinguishing marks, if not of the same kind or quality. All honey submitted must be granulated. No honey is graded or allowed to be exported unless granulated. It must be packed in clean, strong tins, lacquered or oiled on the outside to prevent rusting, with leak-proof lids which may be removed and replaced easily. The packing cases must be clean and new and constructed of well-seasoned timber, planed on the outside and strapped with metal or wired. They must contain not to exceed 120 pounds net. The cases must be branded with an export brand to be registered and approved. The net weight of the honey to be marked on the cases.

The honey is divided into 4 classes, white, light amber, medium, dark.

No charge is made for grading.

Each class is divided into 4 grades:

A, Special grade, 94 to 100 points.

B, Prime grade, 88 to 93½ points.

C, Good grade, 80 to 87½ points.

D, Manufacturing grade, 65 to 79½ points.

For the purpose of grading, the maximum number of points that may be allotted to each class in respect of the several qualities follows:

| | |
|---|---|
| Flavor | 40 points |
| Color | 10 points |
| Condition | 15 points |
| Grain | 12 points |
| Aroma | 8 points |
| Freedom from scum and froth | 10 points |
| Packing and finish | 5 points |
| Total | 100 points |

In our exceedingly free country, the first impression of the reader in regard to such a government regulation is: "too much paternalism." But what if it renders export more easy and protects the honest producer against the speculation of dishonest middlemen and unfair producers?

Some years ago we read a book entitled: "Newest England," by Henry Demarest Lloyd, a description of New Zealand and its progressive and democratic administration. It has left to us the impression of wonderful possibilities in an entirely different method of democratic government from that to which we are accustomed.

Those people at the antipodes may have good ideas, worthy of investigation.—Editor.)

## To National Association Members

SOME time ago the writer addressed an appeal to each United States Senator and Representative from California urging their endorsement and support of the bill introduced in the Senate by Senator Arthur Capper, of Kansas, making it entirely legal for workers of the soil to rganize and cooperate. Many interesting letters have been received from these gentlemen in reply, and since California is a hotbed of co-operation, particularly among the producers of the soil, the beekeepers will be pleased to know that the sentiment in favor of co-operative organizations among the farmers is running very high.

The writer, as Secretary of the National Beekeepers' Association, asks that beekeepers everywhere, and particularly the officials of beekeepers' associations everywhere, write to their United States Senators and Representatives urging similar endorsement of the Capper bill in the United States Senate and in the House of Representatives.

The beekeepers should organize on strictly co-operative lines; by that we mean non-stock, non-profit associations. They should be reasonable, just, and not exorbitant in their prices, and strive to build a dependable outlet for their goods, with a firm policy in the matter of grading, packing and branding, and maintain at all times a serious and watchful consideration for the laws of supply and demand, keeping their honey always moving out freely on to the market after the assembling period has commenced. By carrying out these principles and processes they command the respect, interest and attention of the buying public; they win valuable and confiding customers for their goods. The benefits of organization give them a handsome reward and maintain an unbroken link from producer to consumer. The producer is by this steady outlet insured a normal return every year for his effort, labor and skill; production is thus greatly increased; the consumer reaps his large reward in the increased production, which likewise ultimately the new distributing system can handle at the lowest conceivable cost, thus benefitting both producer and consumer alike, eliminating needless speculation and preserving only the legitimate and necessary middleman.

It costs only $1.50 a year to join the National Beekeepers' Association and help along our work in this and a hundred other similar ways. The new slogan should be: "Government of the beekeepers, for the beekeepers and by the beekeepers."

CHARLES B. JUSTICE,
Secretary-Treasurer National Beekeepers' Association, 318 Investment Building, Los Angeles, Cal.

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Established by Samuel Wagner in 1861

The oldest Bee Journal in the English language. Consolidated with The National Bee Journal in 1874.

**Published monthly at Hamilton, Illinois.**

Entered as second-class matter at the postoffice at Hamilton, Illinois.

SUBSCRIPTION RATES—In the United States and Mexico, $1 per year; three years, $2.50; five years, $4. Canadian postage 15 cents, and other foreign countries 25 cents extra, per year.

All subscriptions are stopped at expiration. Date of expiration is printed on wrapper label.

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## THE EDITOR'S VIEWPOINT

### Granulated Honey

We call the attention of our readers to the contribution, in this number, of our esteemed friend, I. Hopkins, of New Zealand, with the export regulations of the New Zealand Government, accompanying the letter. It will be noticed that "no honey will be graded or allowed to be exported" out of New Zealand, "unless it is granulated."

The authors of this ruling evidently recognize the fact that good honey usually granulates unless it has been doctored or heated. The New Zealand authorities are not the only ones who appreciate this fact.

A few weeks ago, among our correspondence with foreign dealers in extracted honey, we received a letter from an experienced purchaser containing the following:

"Please note that I want **exclusively** candied honey, as it would be very difficult for me to sell melted honey."

The granulation of honey has been a stumbling block in the way of the sales, in this country, because the public has been accustomed to liquid honey. The beekeepers are at fault in not trying to convince the consumers of the quality of granulated or candied honey. Sooner or later, the consumer of America must learn, as he has learned in Europe, that granulated honey is pure and often of better quality than liquid honey, which may have been heated to prevent granulation or to melt it.

There are, indeed, cases when pure honey of good quality remains liquid, but these are the exception, not the rule, in our changeable climate.

Granulated honey is much safer to ship, with less danger of leakage and loss than liquid honey. A great deal of worry and annoyance would be avoided if granulated honey was accepted at its par value, on the American market (as it will sooner or later be), instead of being rejected as impure by the uninformed consumers.

### Dummies vs. Division Boards

The Bee World establishes a difference between a dummy and a division board, as follows:

"Correctly speaking, a dummy is more or less a replica in wood of an even frame with comb. It is exactly of the same outside dimensions and thickness, and is meant to replace the latter. A true dummy, to be strictly correct, should be double-walled, but this form of accessory hive furniture does not exist in numbers on the market, except in the developed form of the Doolittle feeder, being usually replaced by a board of equal external linear measurements.

"A division board, on the other hand, should be of such shape and dimensions as to be capable of insertion between and parallel to the combs in the same way as a dummy, at the same time being capable of complete division of the hive chamber in which it is inserted.

"It will be seen, therefore, that a dummy permits of the creation of a bee space in the same manner as a frame comb does; whereas a division board entirely obliterates such a space by being made to touch the internal surfaces of the front and back walls of the hive, in addition to the floor board, when employed for the brood chamber, as is usually the case."

This is a clear and rational classification and description of the two implements. We might add that the average dummy sold by dealers is a very thin board, the use of which appears to be confined to giving opportunity for the handling of the frames, after its removal from the hive. It is of no use to concentrate the heat, in reducing the number of frames for a small swarm, since a dry comb is about as efficient as a non-conductor. But the division board, which fits at both ends, against the walls of the hive, prevents the circulation of air and effectually confines the heat produced by the bees, even if it does not fit down against the bottom board.

Those who have tried division boards are not usually in favor of a full depth board, but prefer a bee passage at the lower end, to avoid crushing bees in manipulations and also to permit bees which may accidentally find themselves behind it to return to the cluster. Warm and dry material, such as forest leaves, or possibly chaff packed in a light sack, may be used behind the division board, in winter, when bees are confined on a less number of combs than the usual quota.

We make the ends of a division board to fit snugly, while it may be easily loosened from the ordinary amount of propolis used by the bees, in the following manner:

Cut the division board a full half inch shorter than the inside length of the hive. Then nail upon each end of it a round cushion made of painted cloth with some soft material beneath it, which may be easily loosened, by a slight jar, from the walls of the hive. Such division boards prove very efficient in keeping up the warmth of a small cluster, in wide and spacious brood chambers.

### The Netherlands Bee

Having read, at different times, in the British Bee Journal and in other places, the praise of the Netherlands bee, the editor concludes that it is well to place before our readers, in this number, the statement of a Netherlands beekeeper, in praise of this bee.

Looking upon it in an impartial manner, we readily detect that the bees of Netherlands differ little if any from the common black bee of the continent; that their prolificness cannot be very great, since the skeps in which they are kept are so very exiguous that their swarms do not average more than two pounds. A study of the map also shows us that there are no mountains between Holland and Germany; therefore, noth-

ing to prevent the uniformity of the black bee.

If nomadic beekeeping is advantageous to the bees ,causing them to become more active, through transportation to and from special crop regions, then the Italo-American bees of the United States, which are kept in much larger hives, with more inducements to the prolificness of queens, and in many cases shipped back and forth to take advantage of extra crops, and exposed to rigorous winters, should be and undoubtedly are very superior to the bees of Holland.

In view of the necessity of importation of bees into the devastated regions from somewhere, the bees of the Netherlands will probably prove quite desirable, for that little country is only a few hours' ride, on the railroad, from the scenes of destruction of the late war. If the beekeepers of northern France and Belgium secure swarms from Netherlands and improve the stock by the insertion of a few hundred American-Italian queens, they will probably have better bees than ever before. So let us volunteer to send them a few queens of good stock, the coming summer, to help them out.

### An International Bee Magazine

"The Bee World," an international monthly, edited by Dr. Abushady, at Benson, Oxon, England, made its bow to the public with its June number. It is interesting, and if it fulfills its program, will prove of use, for there has not been an international bee magazine since the disappearance of Edouard Bertrand's "Revue Internationale," published in Geneva years ago. "The Bee World" began its international life by giving extracts from 12 bee magazines, all, however, being publications in the English language. We wish the new magazine success.

### Macedonian Beekeeping

The article on uses of honey and wax in Macedonia, of Mr. Tabusteau, translated from L'Apiculteur, and published in the American Bee Journal for October, appears to have interested a great many readers. We had written him, before the publication of the article, to ask whether he could supply us with some Macedonian photos, referring to beekeeping in that country. His letter, received too late, enclosed 2 pictures, which we publish on page 380:

"Ste Eulalie, France, Aug. 26, 1919.

"Dear Mr. Dadant: I am very happy to comply with your request, and authorize you to publish what I wrote for L'Apiculteur. I do not wish any pay, but am desirous to please you, for I have not forgotten the honor of your visit in Bordeaux in 1913. I enclose the only two photos which I have on the matter. They represent, 1st, a small skep apiary in Macedonia; 2nd, the apiary of the School of Agriculture of Sedes, near Salonica. You will see, by the poster in the picture, that your name is known even there, the hives in that Macedonian apiary being Dadant hives.

"Accept my best wishes,

"M. TABUSTEAU."

### Death of Joseph Theiler

Joseph Theiler, of Rosenberg, near Zug, Switzerland, died August 21. Mr. Theiler was the owner of the most interesting bee museum in existence. This museum is well enough known to be mentioned in the tourist guides of Switzerland, and we visited it in 1913. An account of this visit was given in the American Bee Journal of August, 1914.

### Criticism

We do not wish to be considered infallible in experience, in theory, or in practice. If we did, we would surely make a failure of what we undertake. We live and learn from day to day and our true friend is the man who shows us a better implement than the one we use or a better method to keep our bees, to winter them, to prepare them for the honey crop, or to dispose of that crop.

So we need criticism, each of us. But it must be judicious and kindly criticism, written with the view of making an improvement in what we practice. Some men are backward in telling what they have found out, and need to be urged; while others are ever ready to find fault without considering that their way may not suit the conditions, because their circumstances are different.

But our true friend is he who calls our attention to a defect in an implement or to a weak spot in an argument, who does it kindly and with the sole purpose of helping progress.

So, dear reader, when at any time you have a way which you consider better than the methods published, no matter in what detail of beekeeping, let us have it.

It may not prove of value because of different conditions of climate, or crops, or other circumstances. It may have been tried and discarded. But even if, for some reason, it cannot be used, no harm will be done. "Many mickles make a muckle," and your contribution, if ever so little, should be brought forward to help if possible in the building up of the industry.

### Bees and Orchards In Holland

In the British Bee Journal of August 21, "Centurion" writes of his being in Holland and visiting beekeepers. He writes: "Whereas, 15 or 20 years ago, the beekeeper had to pay to be allowed to place his bees in orchards, nowadays not only the fruit growers let the hives in free, but often pay a small fee for them to be put in their orchards This change, whereby the apiarist is relieved of paying for the use of the orchard, and sometimes becomes payee, is due to the government leaflets which have impressed the fruit growers the great value of the bee for cross-pollinizing the flowers."

The world is surely growing in knowledge and our industry is getting recognition everywhere.

### An Extractor Worth While

Calling upon E. E. Coveyou, at Petoskey, I saw in his honey-room an extractor of sufficient capacity to take and extract, at one time, the honey of 64 Langstroth frames, or 128 shallow extracting frames. And the beauty of it is that the frames are slowly reversed, as they are placed in baskets which slowly revolve inside of the machine, so that both sides are extracted without any change of motion. This machine is patented. It has cost Mr. Coveyou several years of work and experimentation, but now appears to be a success. The only objectionable feature is the cost of the machine, which will be, I am told, about $300.

### Foulbrood

An article on foulbrood, written in the French language, by our editor, for the Swiss "Bulletin D'Apiculture," was so well received that the Swiss editor republished it in pamphlet form. It has since been copied by several bee publications, among which we will name the Algerian annual "Nahhla" and "L'Abeille" of Quebec. Our thanks are extended to our contemporaries for this honor.

# COMB HONEY PRODUCTION IN COLORADO

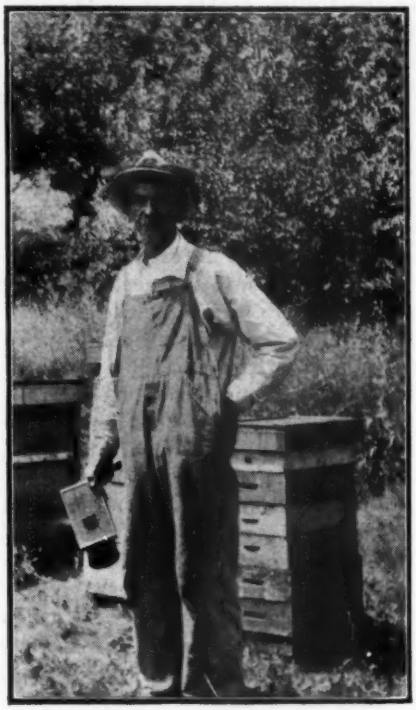
## Glimpses of Some of America's Extensive Beekeepers, Their Localities and Methods---By Frank C. Pellett

COLORADO is a magic word to the summer tourist. The spell of her mighty mountains, the lure of her trout streams and the joy of motoring over her many good roads, attract thousands of vacationists during the heated months of summer. Colorado's mountain parks are rapidly becoming the playground of the nation. Fortunate is the man whose daily work is amid such surroundings. Some of the best beekeeping territory in the State is along the eastern foothills of the Rockies, from Denver north to Ft. Collins.

It was my pleasure to visit several well-known beekeepers of this region during the month of August, just when the honeyflow was on and conditions were most favorable. Prospects had not been favorable early in the season, and it was feared that the crop would be short. A turn for the better set everybody to hustling on the supers and honey was piling up at a great rate at the time of my visit. Several days were spent with the beekeepers, in their regular work in the apiary, in order to note any difference in practice due to local conditions. There are few localities where comb honey is still produced on the scale of Eastern Colorado. The men visited are experts who know their business and who are making money. While their methods differ widely, in some respects, from those practiced in the East, I would hesitate to question the judgment of such men that these methods are best for their locality. In the East we find that good winter protection is very desirable, if not essential. In Colorado few beekeepers provide anything except plenty of stores and a good windbreak. Most of them are agreed that a windbreak is very desirable. I found several who are experimenting with winter packing, but no one was quite ready to say that the results justify the extra cost. While the nights of winter are cold, there is almost constant sunshine during the day and the periods when the bees are unable to fly are short. Under these conditions most of the colonies come through the winter, although sometimes considerably weakened.

Herman Rauchfuss has several winter cases in each of his apiaries. He has built them substantially with plenty of packing and there is no question but that the bees come through in fine shape in them. Although he expects to continue their use for some time and give them an opportunity to demonstrate their value, he is not yet convinced that they are worth the extra cost. I failed to find a single beekeeper, in this section, who is a warm advocate of winter protection such as we think necessary further east. There is unquestionably a great difference in conditions, yet to the outsider it would seem that some extra protection would relieve the bees of a heavy tax in generating heat during the cold nights.

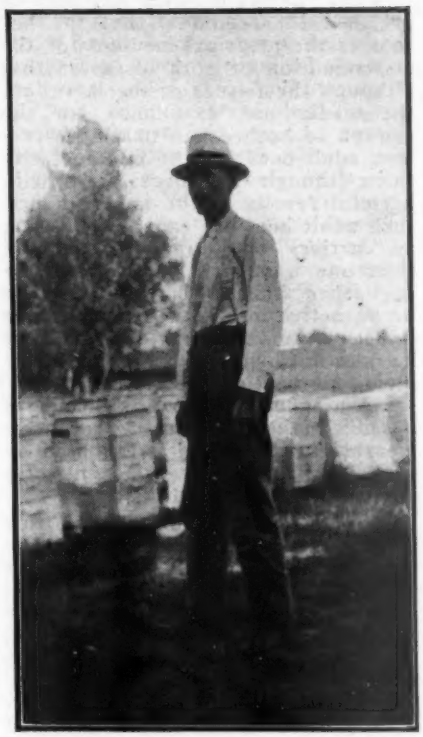
A man who is prejudiced in favor of extracted honey production and an advocate of the large hive, gets something of a jolt when he finds so many men doing things in a big way with the 8-frame hive and who object to anything larger. It is readily apparent that the large hive is unsuited to comb honey production, while the small hive could be used for extracted honey without serious inconvenience. However, in most localities the production of comb honey on an extensive scale has been abandoned in favor of extracted honey and probably will not again be resumed. The market during the wartime period has favored the extracted honey producer and the general impression is that it will continue to do so. It may be that so many will turn to extracted honey that the demand for comb honey cannot be met and that those who continue to produce it will profit by their persistence. While present prices make comb honey profitable there is not as much difference in price as the extra effort necessary to produce a fine article would justify.



Herman Rauchfuss is probably the most extensive comb-honey producer in Colorado at the present time.

Herman Rauchfuss produces comb honey in outyards quite successfully.

Herman Rauchfuss combines his manipulation for swarm control with the making of increase, thus doing away with one serious objection to the small hive. He winters in two stories with a large reserve supply of honey. A sufficient supply is insured to carry the bees through the uncertain period of spring and, with two stories for brood rearing, he has in effect a large hive during the brood-rearing period. His main flow is from alfalfa and comes in August. At the beginning of the first honeyflow his two-story colonies will usu-



Harry Crawford, a well-known comb-honey man of Colorado.

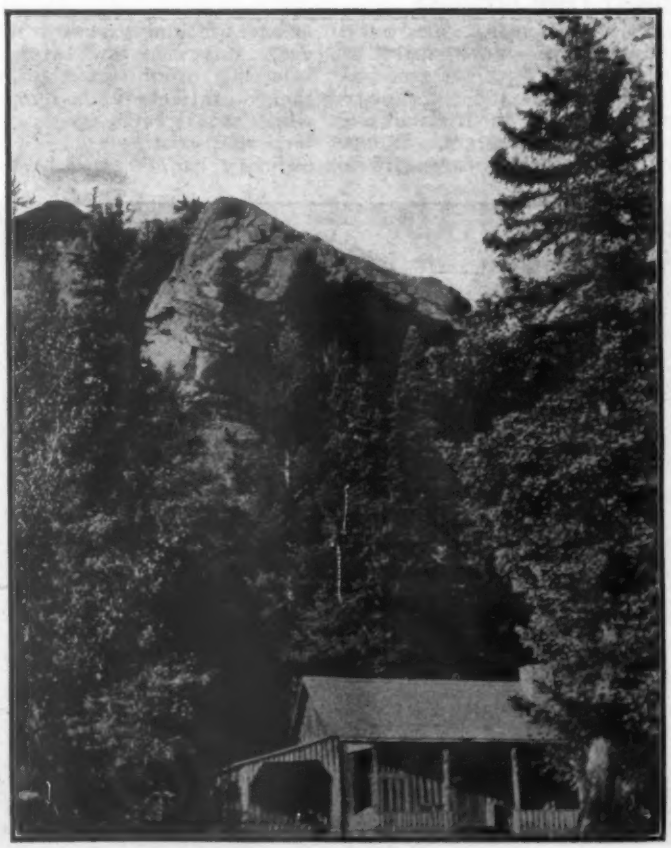
ally be full of brood and honey. A flight hole is provided in the upper hive body. This is lifted off and a comb-honey super set in its place on the lower hive body. On top of this comb-honey super is placed a honey board with the escape hole covered with queen-excluding zinc. The upper hive body is then replaced on top of the original hive with the super between. There is then an opportunity for the bees to pass back and forth between the two compartments, but the small opening through the escape hole covered with excluding zinc does not facilitate free movement. The bees soon use the flight hole in the upper body freely. At the end of eight or nine days the division containing the laying queen is removed to a new stand and all queen-cells cut from the queenless portion. A virgin queen is given to the colony remaining on the old stand. If he has been too busy to rear a sufficient number of young queens, he usually finds enough ripe cells to supply one to each new division. In this way it is easy to keep down swarming till the beginning of the main flow and also to build up the new colonies in plenty of time for it. He sometimes finds it necessary to give the new divisions a second story for brood rearing, in advance of the principal flow, later removing it, somewhat after the plan followed by Dr. Miller.

This method of making increase in advance of the honey flow would not be practical in the clover region where it is difficult to get the bees up to sufficient strength in time for the flow. This season Colorado beekeepers have enjoyed a good flow from the third cutting of alfalfa, coming late in August and running into September.

Rauchfuss makes a practice of placing full depth hive bodies over his weak or moderate strength colonies. In this way he secures a considerable amount of honey in brood combs. This is not extracted, but kept for reserve to make sure that all colonies are well supplied. He calls attention to the fact that many comb-honey producers lose their best colonies every year because the honey is all stored in the supers, leaving the hive body for brood. When the honey is removed the amount left in the one hive body of an 8-frame hive is not sufficient and the bees die before spring for want of stores. His plan of wintering all colonies in two stories, with a large reserve supply of honey, avoids this danger.

Herman Rauchfuss is probably the most extensive comb-honey producer in Colorado at the present time, having about 1,800 colonies in thirteen yards. It requires expert management to run so many bees for comb-honey and there are few men who might not get some good pointers from a man of such wide experience. He has one apiary, in a protected situation in the Platte Canyon, which is used principally for the production of bees. Full depth bodies are given them for storage of honey, and this honey is used in turn for building up other yards. In this apiary swarms issue early, sometimes so early that snow storms occur later. He has had several swarms there as early as May 1. On one side of this apiary is the Platte river, which furnishes excellent trout fishing; on the other side is a beaver dam. It is needless to say that visitors find much of interest besides the bees in visiting this apiary.

Until he sold his bees last spring, A. J. McCarty was probably the most extensive comb-honey man in Colorado. McCarty sold 2,200 colonies and leased the rest, and is taking a well-earned vacation. However, he is not content and will probably get back to the bees another year. When I visited at his home in Longmont, I found him a very agreeable chap and a live one, when discussing bees in general. He was exceedingly modest about his own success, however, and when it was proposed to tell something of his methods and experiences, he made a counter proposition, that we go with Prof. Spangler to his cabin in the mountains and spend the night up there. This was too good a chance to miss, and the invitation was eagerly accepted. Prof. Spangler has been a teacher in the Longmont schools for many years. Back east he would be considered an extensive beekeeper, with his three hundred colonies. He has a cabin about thirty miles from Longmont, not far from Long's Peak. It is a wonderful drive along the little stream that winds up between the high mountains on each side, and no more interesting scenery is to be found. If this was a publication devoted to travel, instead of bees, that trip to the Spangler cabin in McCarty's big White car,



D. W. Spangler's cabin in the mountains.

would furnish an abundance of material for a feature article. A trout stream runs within about thirty feet of the cabin door and but a few rods further up it is dammed by a colony of beavers, who make their home there. It is not far to the home of Enos A. Mills, the naturalist whose writings have attracted much attention to the wild life of the region.

At Bloomfield lives Harry Crawford, who has made beekeeping an exclusive business for 28 years. He is, accordingly, one of the pioneers at making an exclusive livelihood from bees. He has about 600 colonies of bees and produced 900 cases of comb honey last year, besides several thousand pounds of extracted honey. He has a winter home at Long Beach, Calif., where he has gone for fourteen years to spend the winter months.

I was especially interested in Crawford's packing house, which is situated on one of the main roads to the mountains. His attractive window stops many a tourist who, after buying a small amount of honey to use in camp, becomes a permanent customer after he has returned home. He sold last season as high as $178 worth of honey in a single day to tourists who happened along and were stopped by the sign and the honey display in the window. As is shown in the picture, the house is well painted and fixed up as nicely as a dwelling. This is certainly an effective example of the value of advertising to the passing trade.

## Money From Beestings

A STORY has been going the rounds of the newspapers to the effect that an eastern woman is keeping bees for the money to be made from the formic acid extracted from their stingers. It has long been known that formic acid is present in the sting of the bee and similar stories have appeared in print before. This particular news item, which we copied from a newspaper clipping in our October number, has attracted more than the usual attention. Thomas Forrest, of Hammond, Louisiana, was the first to bring it to our notice, with the request that the facts be given through the American Bee Journal.

A letter of enquiry to the Rochester Germicide Company brings the information that while formic acid was formerly secured in a small way from red ants, it is made now in large quantities by a chemical process from carbon, hydrogen, and oxygen. The Rosebreugh Chemical Corporation, of Syracuse, N. Y., was the first to make it in the United States from the raw material, it having been formerly imported from Germany. We can find no record that the sting of the honeybee was ever utilized in any commercial way.

The beaver dam behind the apiary.

## The Prevention of Foulbrood

By A. Z. Abushady

Late Assistant in the Bacteriological Department, St. George's Hospital; Webb Scholar in Bacteriology, University of London.

BOTH classes of foulbrood are infectious, and both are caused by sporing bacilli. The American disease is due to **Bacillus larvæ,** whilst the European infection is caused by **Bacillus Pluton.** The morphological characters and other features of these organisms do not interest the practical apiarist. It will suffice for him to know that in the early stages of both diseases, these infecting organisms are present in their negative of non-sporing forms, whilst in the later stages of both infections, resisting spores replace the ordinary bacilli. It is helpful, also, to know, before drawing any plan of preventive procedures, that the bee food is the principal medium for the dissemination of both diseases; that although the tissues of the larvæ are the media par excellence for the growth of both organisms, nevertheless, adult bees may be infected with them, though not necessarily with harmful results to the latter; hence, such adult bees are capable of acting as "carriers" of the infection in more than one way; and finally, that the beekeeper himself may unwittingly be an active means of spreading the infection amongst his own bees, if he does not begin with himself in applying preventive measures.

Let us consider now, as briefly as possible, the various preventive measures that should be adopted by the apiarists of every country in combatting these infections.

**1. State Supervision.** By far this is the most important preventive measure, inasmuch as sources of infections, under such organization, are not allowed to multiply, but are immediately isolated and destroyed. The responsibility does not rest with the Government alone, but surely the success of such a supervision greatly depends on the good will and the progressive spirit of the apiarists themselves. In spite of legislative measures, they can make the scheme a success or a failure. It is also in their power (by their collective voice and unity), to induce the Government to exercise such a control. American apiarists are already enjoying such a protection; British apiarists, on the other hand, are still far from it, although they have suffered, and still suffer, from the ravages of both malignant dysentery and foulbrood.

**2. Breeding Resistant Strains.** This is another helpful factor, second in importance only to the former, if not just as important. No one with physiological knowledge will dispute its significance. The basis of success of preventive medicine, both human and veterinary, consists principally in maintaining and reasoning the natural resistance to disease. We may apply this with profit in safeguarding the health of **Apis Mellifica.** We may also judiciously apply the modern principles of eugenics in raising healthy and strong strains of bees. Splendid efforts in this direction are already a feature of American apiculture, but it is to be regretted that the effort is not complete. No trouble is being taken to study the qualities of other than two or three strains of the honeybee, whereas scientific research, on which the progress of the industry much depends, calls for the careful study of almost every sociable strain in its pure condition, and the conduction of experiments aiming at the raising, by judicious crossings, of one or more varieties of desirable bees.

**3. The Practice of Antisepsis.** The soundness of the advice regarding keeping only strong colonies of healthy bees as a protective measure

against the attack or disease, seems to depend on more than one factor. In the first place, a strong colony is always far better organized than a weak one. As a result, all its members are, comparatively speaking, in a better state of welfare, and consequently in better health. Moreover, in a strong colony the queen—the mother of the colony, and the compensating element against loss of life, whatever the cause may be—is well attended to. Again, a strong colony alone can afford the strict observation of principles of sanitation within the hive. Considering that the spores of both **B. Larvæ** and **B. Pluton** are not easily destroyed, it is difficult to believe the ordinary cleaning of the combs by the bees is in itself sufficient to remove sources of infection from previously infected combs or to protect clean ones against the lodgment of a source of infection. It is possible that a thin coat of propolis or another resinous substance of some antiseptic value is in addition spread by the bees on the surfaces of the empty cells, thus rendering any remaining spores more or less harmless. This view might be offered as an explanation for the success of the Alexander-House-Miller treatment of European foulbrood, although the requeening is not an insignificant help. Should this view be acceptable, we might ourselves copy this lesson from the bees, and include antiseptic measures amongst our preventive procedures. In any case, it is only too logical to think of antiseptics and disinfectants in combating infections, irrespective of their causative organisms and of whether they are pure or mixed.

Considering that foulbrood is principally an alimentary infection of the larvæ, it is most essential to prevent the infection of the food. During brood rearing, water is much sought by the water carriers, and it is helpful to medicate it with a suitable antiseptic. No artificial pollen or syrup that has not been previously medicated with such an antiseptic should be given to the bees. In addition, it is helpful to replace the hives at least once a year by clean disinfected ones. The gentle spraying in warm weather of the flying bees in front of the hives, also of the combs with their covering bees, and of the eggs and larvæ in the cells, with a warm solution of a non-poisonous antiseptic is highly desirable for the protection of the bees against more than one infectious disease. It means trouble and expense, but it means also safety. This practice should be frequently repeated. It will thus reduce the possibility of the establishment of a serious infection to a very low minimum. Anything less than the thorough use of an antiseptic in the manner here suggested is next to valueless. An occasional spraying of the bees and the combs is merely a wasted energy. The practice should be done methodically and frequently. Let me say in this connection that, with the proper application of a suitable disinfectant, it is sheer waste to advise destroying combs infected with **B. Larvæ.**

Our next problem is to consider the choice of suitable germicides for both external and internal use, the dosage and the correct method of their application. Generally speaking, germicides may be divided into two classes—those which are poisonous and those which, comparatively speaking, are non-poisonous. Naturally our selection, as beekeepers, goes to the second class. But on further examination we find again that most of these preparations, on account of their toxicity (however small it may be in comparison with that of the first class), are decidedly unsafe for internal administration to our bees in appreciable quantities or over a long period. And when we still further examine them we find that those which appear safe unfortunately present disadvantageous features which minimize their usefulness. A watery solution of mercuric chloride is obviously unsuitable for use in the apiary because it is a deadly poison; but we are not at an advantage, so far as internal administration to the bees is concerned, with any of the germicides derived from coal tar products, although the less toxic and most potent of them could certainly be used with safety for disinfecting hives, quilts, frames, extractors and other appliances, so long as they are not intended to be immediately given to the bees. But what about hydrogen peroxide, hypochlorides and allied preparations? Unfortunately these easily decompose, and therefore are almost valueless for medicating the bee-food, though, no doubt, their solutions for immediate use (e. g., for spraying with), would be helpful. It is easy to give many illustrations to your readers testifying to these conclusions, but it is unnecessary to undertake this analysis. Almost every germicide that I know of possesses advantages and disadvantages, and the attempt to create preparations that would prove ideal for both internal as well as external antisepsis have not met, so far, with an overwhelming success. For the purpose of external antiseptis, I would suggest a universal cheap germicide such as chloride of lime, in spite of the unpleasant odor which it gives. It is suitable for disinfecting hives, but it will not do for sterilizing an extractor, because of its corrosive action on metals. A 2 per cent solution of the powder (containing about 0.8 per cent of available chlorine) or even a 1.5 per cent solution will suffice. According to Klein, chlorine, even in such a low dilution as .05 per cent, is capable of killing most bacterial spores in five minutes. It is my intention to avoid, so far as possible, for economical reasons, recommending proprietary articles. I shall be content, therefore, with recommending an alternative preparation which has an international reputation and which has ceased to be a proprietary article. I am referring to lysol, which is now manufactured in different countries by several chemical firms. A 2 per cent solution of this antiseptic is sufficiently strong for all our purposes. A remarkable advantage of it is that it acts as a soap, and thus can remove dirt from the articles under disinfection; but it is wiser (in order to insure thorough disinfection as well as to preserve the power of the germicide) to remove beforehand all organic matter by means of soap and water, soap in itself being also of some antiseptic value. Frames infected with the organisms of foulbrood should be relieved first of their dead larvæ and infected honey, then dipped in a bath of soap solution for half an hour, then in clean water for a similar period, and lastly transferred to a lysol bath (they should be placed erect in the bath)


Crawford's packing house attracts many a passing tourist who becomes a permanent customer.

in which they could be left during the night, then taken out and allowed to drain and dry. Considering that built combs are far from being cheap in value, this trouble is justified in preference to the wasteful destruction of the combs. Such a thorough treatment should remove every risk in re-utilizing those previously infected combs. On the other hand, for the purpose of internal antisepsis, it is difficult to make a happy selection. Thymol, which is a more powerful germicide than phenol, might be suggested, but unfortunately it is difficult of solution in cold water (1 in 1500), though it is fully soluble, at least comparatively speaking, in glycerine (1 in 190); still a saturated watery solution of thymol might deserve experimenting with. Reputable chemical firms which have interested themselves in progressive research on antiseptics, have naturally kept to themselves the secrets of their success, with the result that I am unable to better serve the interests of the beekeeper by recommending a non-proprietary article of recent discovery that would suit his requirement. I have already advised in the British bee press the trial of "Yadil" (chemically known as "trimethenol allylic Carbide Compound") in connection with the prevention and treatment of the Isle of Wight disease, and if I suggest here its trial for the prevention of foulbrood as indicated above, I should like to emphasize in this connection, as I have repeatedly emphasized elsewhere in connection with the prevention and treatment of malignant dysentery, that there are other factors to consider besides the use of antiseptics, and that disappointment will invariably follow from ignoring them, irrespective of whether the beekeeper is a simple novice or a great authority of half a century's experience.

**To sum up**—1. as both types of foulbrood are infective, Government control and legislation are justified, and on such supervision, the first hope of the apiarists in any country in preventing the spread of this pest should be directed.

2. The breeding of comparatively immune strains of bees (apart from the general advice regarding the maintenance of none but healthy and strong colonies) is to be encouraged as well as enlarged in scope. The increase of the natural healthy resistance of the bee is an excellent germicide.

3. The use of antiseptics in an intelligent manner in combating bee infections deserves better recognition and further study.

4. These three important factors are supplementary to one another; a successful prevention or a great diminution of the incidence of foulbrood is not likely to result without their combination.

London, England.

Editorial Note: This article is interesting, since it gives the English viewpoint in contrast with the American. In England the apiaries are small and it is possible to work with a few colonies in a way that would be out of the question in our large American apiaries. There are numerous beekeepers in America who number their colonies by thousands, and the man with less than two or three hundred hives is called a small beekeeper. Even though it had been proved that treatment with drugs was practical as far as results are concerned, it would not pay us to deal with disease in that way. The English bee journals devote a large portion of their space to a discussion of drugs in the treatment of bee diseases. In America there is no prominent beekeeper who now recommends an attempt to cure any bee disease by means of drugs. Many experiments have been made with various disinfectants for the purpose of curing American foulbrood, but, so far, not one successful case has been published in this country. We agree with our correspondent that the prospect is sufficiently promising to justify further study and experiment, but would warn beginning beekeepers not to risk any but well-tried methods of dealing with foulbrood.—F. C. P.

M. C. Tanquary, who leaves the Kansas Agricultural College to become State Entomologist of Texas.

## Some Important Changes

THE resignation of F. B. Paddock as State Entomologist of Texas to succeed F. E. Millen as State Apiarist of Iowa, has already been announced. Mr. Paddock began work in his new position at Ames, Iowa, in September. Mr. Paddock is well known to the beekeeping fraternity, and the best wishes of a host of friends go with him to the new home.

We have just received word of the appointment of M. C. Tanquary, of the Kansas Agricultural College, to the post vacated by Mr. Paddock. Mr. Tanquary is widely known through his connection with the MacMillan Arctic expedition. He spent four years in the Arctic regions and knows all the hardships as well as the attractions of ice-bound lands of the far North. When the relief ship failed to reach the party at the expected time, it fell to the lot of Tanquary to make the long journey of a thousand miles with a dog sledge over the ice to a little seaport in Greenland. From there he took passage on a boat for Copenhagen, where he engaged a relief ship to go north to rescue the little party.

Paddock has found special interest in bees for some time past and could not resist the opportunity to leave the field of general entomology for the special field of apiculture. We look for the work in Iowa to prosper under his direction.

We also feel that the Texas beekeepers are to be congratulated in the fact that the position of State Entomologist is again filled by a man who is keenly interested in beekeeping. Mr. Tanquary is at present a partner in a large line of apiaries in Western Kansas, hence knows something of the importance of commercial beekeeping. We believe that both positions are ably filled and that the interests of the beekeepers in both Iowa and Texas will be well cared for.

## Honeycomb Production

The Scientific American supplement reprints at length Dr. E. F. Bigelow's article on "How Honeybees Produce Honeycomb," which first appeared in Guide to Nature. This article, which was noted in this journal at the time it appeared, has attracted more than the usual amount of attention. Two pages of the August 16 number of the supplement were devoted to it, and more than two pages in the August 30 number.

F. B. Paddock, who resigned as State Entomologist of Texas to become State Apiarist of Iowa.

## Beekeeping in the Netherlands

By P. J. Frenay

(Translated from L'Apiculteur)

IN the Netherlands few bees from foreign countries are kept in their purity. In fact, they keep only the common bee (**apis mellifica**) which constitutes the basis of all apiaries, in France, Belgium, and in general all through Western Europe. It is incorrectly called "German bee," probably because it is similar to that of Hanover, Oldenburg, Lunebourg, etc., whose apiarists are in constant relations with those of the Netherlands.

The indigenous bee of Holland is distinguishable from its congeners of the common race by qualities sufficiently remarkable to cause many breeders to believe in the existence of a special variety, which they have called "heidebei," or "heather bee." This conception has been, in several circumstances, confirmed; as for instance, through an address of Dr. Dathe who, as early as 1830, called the attention of beekeepers to the bee of heather regions of Luneburg, Hanover, a variety of the common bee which he considered as specially interesting, through its remarkable activity in work and the fecundity of its queens; also the zoological congress of Giessen, Hesse, in which the heather bee was studied, classified it as a special variety and baptized it with the name of "apis mellifica Lehzeni," after Lehzen, the apiarist who described it.

This question of the existence of a distinct variety, is still at the present day the subject of a great many discussions, among Netherland beekeepers. It is worth while to try to get back to the origin of this variety.

Jan Swammerdam (1637-1680), a learned Hollandese naturalist to whom apiarian science is indebted for numerous and interesting observations, studied bees long before Huber. In his work, (Johannis Swammerdammii Biblia, sive historia insectorum. Leyde, Isaacum Severinum, 1737) he constantly refers to the common bees and does not appear to have been interested in varieties.

The modern Netherland writers, in their practical manuals, are unanimous in mentioning the common bee as indigenous, and say but little on the question of races. This is probably due to the fact that the local bee, by its qualities, has shown herself superior to the foreign varieties, the introduction of which was attempted at different dates.

Dr. G. A. Ootmar, alone perhaps, in his important book, "De Wonderen van het Bijenvolk" (Groningen 1916), goes into details on this subject. He recalls the fact that Theodores Clutius, of Leyde, in the little treatise entitled "Van de Bij" (1597), writes of the bee that it is small, of dark yellowish color, but not blackish; hairless, with a short abdomen. G. A. Ootmar states also that Della Rocca in his "Traite complet sur les abeilles" (Paris, 1760), states that, at that time, France imported from Holland dawn-colored bees. This race, of which there seem to be no specimens left in domesticity, was signalized by this author long before the introduction of the first Italian queens, which permits the supposition that he referred to a local race existing at that time.

Let us mention also Langstroth, who in his celebrated work, "Hive and Honey Bee," speaks of a race called "La Petite Hollandaise," which is said to be a variety of the common race.

Although the foregoing quotations do not agree well, there is no doubt that Apis mellifica is the original stock of the Netherland bee, the possible crosses with the variety mentioned by Della Rocca, or with imported bees, may have modified slightly some of the characters of the race, but they have not created a type sufficiently characteristic to permit the undoubted conclusion of the existence of a distinct variety.

The size of the workers among the different colonies shows appreciable differences; some hives are found in which the inhabitants are excessively small, while others, rarely, of a size resembling that of the Carniolan. The average type which we consider as the standard, shows a trifle larger size than the common black bee.

Since this slight difference is not really an improvement of the race, we must try to indicate why the Netherland bee is so manifestly superior to the common bee, in regard to the prolificness and precocity of the queens, the remarkable activity and rusticity of the workers, and also why they winter so well. Our opinion is that those qualities are due to the conditions of breeding and to the country's climate.

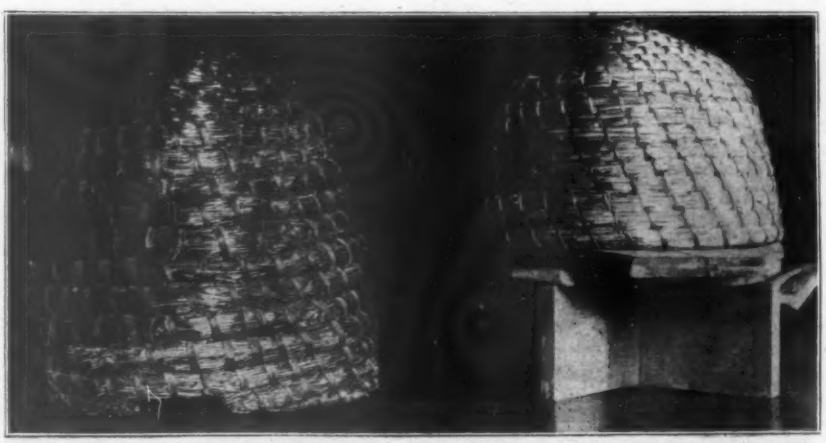
The Netherlands are formed, in the greater part, of an immense sandy plain which was conquered from the sea by the obstinate and secular work of its inhabitants. The altitude is therefore low; a portion of the country is even below the sea-level. The climate is influenced by this situation. It is essentially damp, and the presence of numerous marshes aggravates the conditions. The absence of inequalities or slopes in the land causes the country to be constantly swept by winds. The climate is so severe, the winters so long and distressing, the rains are so frequent that a national wit made the statement that in Holland one can enjoy 4 months of winter and 8 months of stormy weather.

No part of the country shows full resources of beekeeping. Although certain portions have been put in cultivation and pastures, large tracts are still uncultivated and covered with heather and pines. So the bees, having accustomed themselves to the rigors of the climate, have been subjected to nomadic beekeeping. For beekeeping here is positively nomadic.

The beekeepers of the poor sections, in which the blooming of buckwheat and heather is late, send their colonies, in March or April, to more prosperous regions, bringing them back after the bloom of the fruit trees. On the other hand, the beekeepers of the prosperous regions send their bees to the heather at the opening of this bloom, that is to say, in the first fortnight of August. Some Apiarists even move them 3 times. Those trips, of which one at least is made in the heat of summer, represent journeys of 25 to 30 kilometers (16 to 20 miles) in carts, after 100 kilometers, more or less by rail. They have helped to perpetuate the use of the straw skep, which is cheap, easily transported and stands splendidly long and unpleasant trips, when such transportation would be very expensive and dangerous for large movable-frame hives. The skeps used are of straw, 12x14 inches of inside diameter. The flight hole is at about one-third of the height.

When the colonies are located, in early spring, in a country of early bloom, the attraction of honey and pollen-bearing flowers causes them to fly in spite of unfavorable temperature. The rusticity of the race becomes accentuated by this training. The bringing in by the bees of both pollen and nectar encourages the queen to lay. This early urging every spring, necessity helping the organs, causes the queens to acquire forwardness and this quality remains.

The gathering of nectar during many months, owing to the nomadic methods, and the rigor of the climate, causing the death of many



The Netherlands bees are kept principally in small skeps.

workers, the queen must necessarily be very prolific.

From these causes flow the qualities which make the native breed distinguishable and render it a better race.

Early in May, often, the colony is already overstocked. It sends forth its swarms. These are hived in skeps similar to those of the mother colony. A good colony usually gives 2 to 4 swarms; the swarms themselves occasionally cast others, if the season is somewhat favorable.

The swarms in general do not weigh over a kilogram (2.2 pounds). Even those of a half kilogram may be accepted. Though certain of failure if they remained at the same location, their transport to the heather permits them to build up; often the last swarms succeed in storing enough for winter. The colonies which, at the end of the season, have not gained sufficient weight, are fed with denatured sugar. (A wartime provision.—translator).

The old stocks and the first swarms often reach the weight of 15 to 20 kilos (33 to 44 pounds). The colonies nursed especially in expectation of a crop may reach the weight of 25 kilos (55 pounds), and even more.

This method of cultivation presents a great disadvantage, as regards the quality of the honey produced; at the end of the season the hive containing only heather honey; harvesting, being altogether by the use of a honey press; it gives a very inferior product.

For this reason, many Hollandese apiarists have placed honey production in the background and have established themselves as "fabricants" of colonies. Very expert in the matter, acquainted usually with the handling of bees and immovable comb skeps, helped by the ownership of a very rustic race, and early and prolific queens, they succeed in obtaining a first-class product. The proof of it is in the extensive export commerce which takes place in the Netherlands, sending thousands of populated skeps every year to England and Germany. The apiarists of the neighboring countries have been able to appreciate the superiority of the Netherland bee; they introduce it regularly in their countries as an agent of regeneration for weakened apiaries, threatened or suffering with contagious diseases, or degenerated through years of consanguinity.

Small skep apiary in Macedonia.

Unluckily, bees thus produced retain a great propensity for swarming, and for this reason are not fit for use in large movable hives. However, the training of a few generations and careful selection eliminates this fault in great part. It takes several years of patience; but the results are encouraging, for the bee thus managed gradually loses her tendency to swarm, while retaining her other qualities.

The movable-frame apiarist, therefore, should protect himself, if he wishes to buy such bees. If he cannot secure large swarms produced from movable-frame hives, he should at least make sure that the skeps sold to him are inhabited by carefully selected colonies.

On the whole, the Netherland bee is a common bee slightly larger than the average. Her main qualities are rusticity and activity of the workers and prolificness and precocity of the queens. They are little aggressive. They usually build straight, regular combs. The cells, not being filled too full, the honey does not touch the cappings, which gives the sealed comb a whitish tint and a very pleasing appearance, even when it contains dark honey.

Their introduction in an apiary cannot fail to be advantageous. Their value is the greater because no contagious disease has prevailed in Holland. Foulbrood, especially, is unknown there, in the native apiaries. When, at different times, German beekeepers brought there colonies suffering from the disease, the General Government, which effectually protects beekeeping, took measures so strenuous (destruction by fire of every contaminated apiary, bees, tools, clothing and everything that might be suspected of contamination) that the disease never spread. Since 1914, all trade with Germany having ceased, not a single case has been pointed out.

Eysden, Netherlands.

Apiary of School of Agriculture of Sedes.

## More Short Courses

THE Bureau of Entomology in cooperation with the Extension Service of the several States will conduct extension short courses for commercial beekeepers this fall as follows:

Boise, Idaho, November 3-8.
North Yakima, Wash., November 10-15.
Davis, Calif., November 17-22.
Fresno, Calif., November 24-29.
Riverside, Calif, December 1-6.
San Diego, Calif., December 8-13.
San Antonio, Tex., December 15-20.

These courses will, in a general way, be like those given last winter in California, New York, Indiana, Iowa and Minnesota, and like the Chautauqua recently held at Madison, Wis. Messrs. Phillips, Demuth and Sturtevant, of the Bureau, will assist in these meetings and the remaining time will be occupied by local beekeepers and local extension men. In Washington, Mr. H. A. Scullen, Special Field Agent of the Bureau, will assist.

The general plan of the course is for Messrs. Phillips and Demuth to discuss the care of bees throughout the year, giving the behavior of the bees and the application of this to beekeeping practice. On Wednesday afternoon, Mr. Sturtevant begins a series of lectures on disease, ending Saturday morning with a discussion of treatment. Mr. Sturtevant will

have laboratory equipment for examining samples, and beekeepers are invited to bring samples of diseased brood. Further particulars may be obtained by addressing the State Extension Director at Pullman, Wash., Berkeley, Calif., and College Station, Texas. These courses are, of course, free.

### Making a Start With Bees

By Morley Pettit

A CORRESPONDENT writes that on account of lung trouble he has been advised to take up beekeeping. He wishes advice as to best locations in Ontario, and the capital necessary to give a return of $1,500 per year in a normal year. "In any case, what would be the most advisable course to follow?"

There are very few spots in Ontario where farming is successful and beekeeping is not. In fact, in looking over a district, we usually note the general appearance of prosperity or otherwise of the farms and judge accordingly. The soil is the first consideration. Any good farming district with soil not too heavy, and particularly not too light, will give good returns to a good beekeeper. The only other consideration from the standpoint of honey production is to avoid crowding beekeepers who are already occupying the district. In considering this matter one must look to the future and allow for expansion. If a $1,500 income is to be the goal, the two or three apiaries necessary can be placed in desirable locations almost anywhere in Ontario; but if ambitions are liable to expand with the business greater care will have to be exercised. The only way is to learn of a place where one would like to live, then go and look it over. Then try another until satisfied.

A good beekeeper expects at least 57 per cent annual income on his capital investment, exclusive of real estate. Now hold on! We are not profiteers, any more than any other skilled workers with comparatively small investment in tools. That is all the bees and equipment are, for without skill and experience they are a very uncertain investment.

By far your best plan, if circumstances permit, would be to live for whatever wage you can get with a successful beekeeper for one of two seasons. This would give you an experience that would cost you years and great expense to get in any other way. Another plan would be to buy a fully equipped apiary of 75 to 100 colonies and hire an experienced beekeeper to spend one day in the week teaching you. You will easily see that the latter plan would involve greater chances of success or failure. The plan has been worked with the best of results, but the beginners involved were real good sports, and that is one of the prime requisites of success in beekeeping.

Georgetown, Ont.

# BEEKEEPERS BY THE WAY

### A Booster for Sweet Clover

For 25 years or more, R. A. Morgan, of Vermillion, S. Dak., has persistently boosted for sweet clover as a forage plant. In season and out of season he has insisted that more sweet clover would make a more prosperous agriculture. When sweet clover was thought to be a weed and it was regarded as a crime to spread the seed, he began his campaign. Sweet clover reaches its highest development in the secretion of nectar in the region from the Missouri river valley, westward. Wherever there is a large acreage of sweet clover in the plains region, we find good beekeeping territory. While Morgan has never been an extensive beekeeper, he has kept bees since the days when he lived near Adam Grimm, in Wisconsin, and became impressed with the great possibilities of the industry. He was among the first to appreciate the possibilities of sweet clover for the beekeeper. When he became convinced that the plant had a place as a farm crop, also, he began a campaign to introduce it to every part of South Dakota.

Morgan, of South Dakota

When the writer had occasion to mention Mr. Morgan's name in a letter to a State official of South Dakota, the latter replied that everybody worth while in that State knew Morgan. As editor of the Bee Department of the Dakota Farmer, he has done much for the development of beekeeping in the Missouri valley. There are few areas where sweet clover is better appreciated than in the territory where the Dakota Farmer circulates. Much of the credit for this condition is due to Morgan's tireless efforts. The pleasing thing about it is that nearly every man who has been induced to plant sweet clover as a farm crop is enthusiastic in its praise. To espouse an unpopular but worthy subject and to win over his public is an enterprise worthy of any man. We feel that Morgan is to be congratulated on his success in popularizing sweet clover in the Middle West.

### Shipping Bees in Refrigerator Cars

"I helped prepare five carloads of bees, of from five to seven hundred colonies each, which were shipped into Utah and Idaho. I left Colton, Calif., with the fifth car, which was the first car they shipped in a refrigerator, under ice, to Oasis, Utah. There were about 525 colonies, some of which had from 5 to 7 frames of brood and a strong force of old bees. These were the ones we had run for orange honey and split up after the flow was over.

"They came through in fine shape and started to work at once on the sweet clover and alfalfa and are building up in great shape. Just a week ago they shipped me another car of 425 colonies, so now I have 950 to look after, with two young lads of 17 years to assist me."

The shipping of bees in refrigerator cars has passed the experimental stage and has been found an assured method of shipping bees through the heated desert sections of the Western States, where, under ordinary methods a heavy loss of worker bees, and especially of brood, was sure to occur.

(Western Honey Bee, Aug., 1919. )

### Caging Queens

By W. Griffiths, Silkmore, England

REFERRING to Dr. Miller's reply to "Ohio," in the August number of the American Bee Journal, "Caging Queens," Mrs. Saint, a first-class expert of the British Beekeepers' Association and a member of the Staffordshire Beekeepers' Association, has had an Italqueen from Signor Piana, of Italy, in a cage for six weeks. She had occasion to introduce this queen to a strong stock which was certainly queenless, but had a super on. She removed the super temporarily, opened out the brood frames slightly and placed the queen cage over the space, having previously removed the cardboard from over the candy, then replacing the super. Six weeks later she removed the super and was very much surprised to find the queen still in the cage. All the candy was gone and in the space under the cage there was a lovely new comb extending to the floor of the hive. This was full of brood in all stages, as was also the adjoining

comb. The queen was then relieved by removing the perforated tin, and was accepted by the bees. Now, for some reason or other, this queen refused to leave the cage; not the worker bees' fault, for they had evidently fed her and carried her eggs down into the combs, thus bearing out in every detail your answer to "Ohio." This queen was one of the number imported from Italy by the Food Production Department in connection with the re-stocking scheme, and thus was in the cage between 7 and 8 weeks.

(This is a very interesting observation, since there is only one other alternative in explanation, and that would be if the queen had gone out of the cage to lay and back again. That is less likely than the carrying of the eggs and caring for them as fast as dropped by her. It seems to us that this is another argument against the assertion that bees are "reflex machines."—Editor.)

## Beekeepers of Two States Hold Meeting in Omaha

MEMBERS of the Douglas County, Nebraska, and Pottawatomie County, Iowa, Honey Producers' Association, joined on Saturday, September 6, in an educational meeting and a social good time gathering at the summer home of Mr. W. A. Jenkins, at Carter Lake Club, Omaha. Mr. H. C. Cook, President of the Douglas County Association, opened the meeting with a talk on the various features of beekeeping. Prof. Myron H. Swank, Professor of Entomology at the State College, and also Secretary of the Nebraska Honey Producers' Association, gave an inspiring talk.

Prof. W. H. Brokaw, Director of Extension in Nebraska, talked on the value of meetings of this nature and expressed the hope that the Extension Department might employ a bee specialist in the near future. He also discussed the value of boys' and girls' club work in the State.

Mr. E. W. Atkins, Specialist in Bee Culture in Iowa, was the principal speaker of the day. He gave a demonstration in the beeyard of Mr. Jenkins, where he opened up several hives, explaining how to handle bees, how to detect foulbrood, and incidentally giving the bees a chance to sting several of the spectators. Dr. Atkins also gave a very interesting and full discussion of the methods of wintering bees.

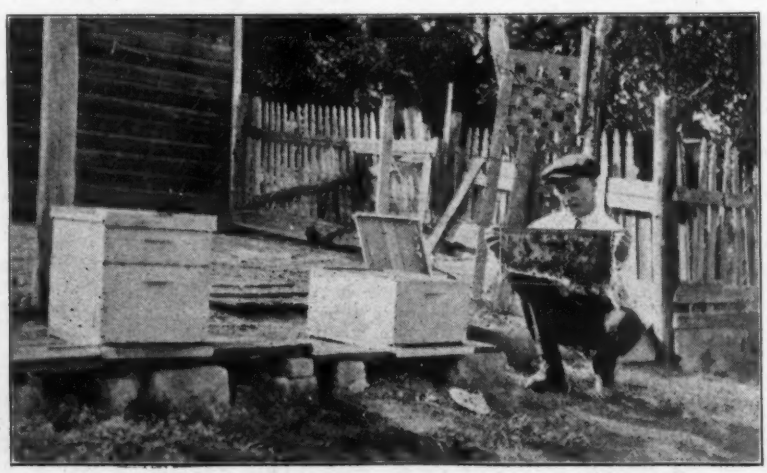
Members of the club receiving instruction in the apiary of H C. Cook, of Omaha

Another speaker was Mr. Otto Timm, who related his experiences and observations on a recent trip he had through the Rocky Mountain district.

County Agent Maxwell gave a report of the Boys' and Girls' Beekeeping Club of Douglas County. Mr. Maxwell was assisted by Mr. Cook, of Omaha, and Mr. Timm, of Bennington. Several boys between the ages of 10 and 18 years began the work June 5, with one frame of brood, bees and queen, in a modern hive. On September 6, Mr. Cook, Dr. Atkins and Mr. Maxwell judged the contestants' work. Leonard Mangold, of Bennington, received first prize, which is a free trip to the Junior Farmers' Week at the State Farm, Lincoln. From the one-frame nucleus he produced two strong colonies of bees and 24 pounds of comb honey. The cost of his equipment to begin with was $12.50. The 24 pounds of honey would easily sell for 40 cents a pound, amounting to $9.60. The two colonies of bees are easily worth $20, making a total net income of $17.10 for the first year's work in beekeeping.

M. D. Vreeland, Florence, won second prize, which was a hive and super for comb-honey production. This was contributed by the Kretchmer Mfg. Co., Council Bluffs. T. E. Grau, Bennington, won third prize, which is one year's paid up subscription to the American Bee Journal and one year's membership in the Nebraska State and Douglas County Honey Producers' Association. Eggert Ohrt, Irvington, received fourth prize, which was a copy of Langstroth's book, "The Honey Bee," and Mr. C. Clinton Dunn, Omaha, won fifth prize, which was a copy of Dadant's "First Lessons in Beekeeping." A larger club is anticipated next year.

After the speaking, a bounteous picnic supper was spread and a general good time was enjoyed by all, and it was agreed that Mr. and Mrs. Jenkins were splendid as host and hostess.



Winner of first prize in the Douglas County Boys' and Girls' Bee Club.

## Gleanings Editor Ill

Since early boyhood, E. R. Root has suffered much from earache, his last trouble along this line being as recent as two years ago. This summer he noticed that he was gradually becoming deaf; and, on going to a specialist who had cared for him in the past, he found that the continued inflammation had finally caused an accumulation of pus in the inner ear, thus necessitating what is known in surgery as a "radical mastoid" operation. This was successfully performed on Monday, September 8.

Mr. Root was able to leave the hospital on September 17, but will have to continue treatment for some weeks to come. Fear of any complication now being remote, there is every reason for a complete recovery. It is a strange coincidence that this same trouble is what caused the early death of that able apicultural writer and authority, W. Z. Hutchinson, the founder and editor of The Beekeepers' Review.

Later.—Mr. Root is back in his office and says he is feeling fine.—Gleanings in Bee Culture.

# LEGAL SERVICE DEPARTMENT

## What Constitutes a Contract?

"Several weeks ago, in reply to an inquiry for honey, we stated to the party that we would ship him 5,000 pounds of honey, but no formal contract signed by either was drawn up, nor was any date of shipment agreed to.

Now we have advised the party that we do not care to send the honey, inasmuch as we want to feed it back to colonies of bees that are short of stores.

This party now threatens to sue us for damages for the full amount of the honey. As we see, this party is always ready to sue somebody if the slightest chance is given.

Previous to this we have been told by this party in letters over his own signature that he is not a beekeeper; that he merely buys honey as cheaply as he can, and sells it at a profit, perhaps from 20 to 40 per cent. However, at the same time he tells his customers that he is the producer of the honey, or at least he gives his customers to understand that he is the producer of this honey, and they purchase the product on this basis.

In one instance of correspondence he says: "A good bluff successfully conducted, is the battle half won."

Furthermore, he says: "All I have is a mail box, and must keep up my reputation and guarantee by demanding and delivering good products."

Realizing that this party carries on this sort of business, we decided that we would not send him any more honey. We did send him some honey two years ago, before we found out his methods.

Please advise us whether or not anyone has the right to sell honey by such pretenses.

If this party sues us for damages in not sending the honey, would we have grounds for a counter-suit? Possibly your legal department can advise us."

Wisconsin.

A proposal by letter to deliver honey, whether voluntary or in response to an invitation or inquiry, if accepted according to its terms, constitutes a contract.

The acceptance, to complete the contract must be made within a reasonable time, and must be unconditional. If the conditions of the proposal are varied in the acceptance, then they must be consented to by the proposing party.

The proposal must be sufficiently definite to identify the parties and the subject matter, and sufficiently specific in regard to the price and other terms of sale to satisfy the law of sales in general, in regard to these particulars.

Usually, where the time for performance of any act is not specified in the contract or proposal, the law will imply that a reasonable time under the circumstances is intended by the parties and the contract will not fail for that omission. So also, unless terms of credit are specified, the law will imply that the transaction is to be on a cash basis.

The fact that the proposed purchaser is engaged in disreputable or illegal business will not avoid a contract for the purchase of goods by him or to him. If, however, it could be shown that such purchaser intends by such purchase to defraud the seller or to use the goods of the particular purchase to further a general scheme to defraud whomsoever he may, the rule might be otherwise.

Under the late laws against what is commonly called "profiteering," it is possible that a contract can be avoided by showing that the purchaser intends to create a scarcity of the article on the market, or otherwise unlawfully influence prices. Precedents along this line are lacking in authority, however, and the point is not settled.

In general, the measure of damage for failure to perform a contract of sale of a marketable commodity is the difference between the contract price and the market price of the article. If the seller refuses to deliver according to the terms of his contract, the buyer may purchase at a higher price in the open market and hold his seller for the difference, if any, between what he paid and what he should have paid under his contract. On the other hand, if the buyer refuses to accept the property and pay the price of the contract, upon tender of delivery within the contract time at the contract place of delivery, the seller may sell on the open market and hold the buyer under his contract for the difference.

It is quite a common experience that this difference is less than the price of a law suit, even to the winner.

Questions as to whether particular correspondence constitutes a contract and whether such a contract is enforceable, and the like, must be measured largely by the laws of the locality of the controversy, and one should not proceed to the point of litigation without the advice of competent legal counsel.

As a general proposition it is advisable to live squarely up to the terms of a contract or agreement of any kind, whatever the cost, if it can be done. Losses suffered and sacrifices made in this way generally measure less than the loss of confidence and self-respect consequent upon a technical evasion.

The keeping of the contracts is encouraged by the law, for the stability of commerce depends largely thereon. The courts are apt to look with disfavor upon a litigant who would avoid the terms of a clear agreement to sell and deliver. Even where, without the fault of the seller, the goods of the contract are destroyed before delivery, the seller may be held in damages for failure to deliver unless provision is made against such a contingency in the contract.

# BEEKEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

### A Strong Colony

I have a hive of bees that will not swarm. The hive is running over with bees. I have given them a 2-story hive and two supers, and the whole thing is full. Can you tell me what to do with it? I am new to the business and can't understand what is wrong.

WISCONSIN.

You have given the colony a two-story hive and two supers, in all of which the bees are presumed to be working, and you wonder why they do not swarm. It is not hard to imagine those bees saying: "What a kind mistress we have! Other colonies are forced to swarm because so crowded for room, but our mistress has given us all the room we need, so we are saved all the bother of swarming." If you had left them with one story and one super, very likely they would have swarmed. There is a possibility, too, that the character of the bees has something to do with the case, for some colonies are more given to swarming than others. At any rate, most beekeepers would feel thankful to have bees like such a colony, quite willing to do without swarming.

### Value of Plant, Etc.

How would you go about setting a value on your plant? How much would you allow for strong, medium and weak colonies? How much for nuclei, old hives, equipment? Would you go by what you paid or what you could sell for? What is the best way to clean an extractor, and how frequently should it be done? I wish Miss Wilson would discuss this subject quite fully.

NEW JERSEY.

Your question as to valuation of a bee plant is one not easily answered. Perhaps for purposes of declaring a dividend on the investment the right thing would be to count the actual cost. But how figure on nuclei, etc., that you have not bought? Suppose you have a colony with bees enough to cover well 8 or 10 frames, another

with enough for 4 frames, and a third with enough for 2 frames. If the time was spring, it is possible the second might be worth three-fourths as much as the first, and the third a third as much as the first. But if it were late fall the second might be worth a third as much as the first, and the third only a tenth. Ignorance must be the excuse for not giving a more satisfactory answer, and also for making no attempt to answer as to equipment.

To clean out an extractor the right kind of a brush is important. A dish mop with a long handle will do, but the one in use here is much better. It was gotten originally for cleaning out glass fruit jars. The brush, handle and all, is about 20 inches long, the brush part being 8 inches long, round and made of bristles. The long handle allows one to reach to the bottom of the extractor, and the brush is small enough in diameter to go anywhere around or inside the baskets. As soon as extracting is over, wash the extractor thoroughly with cold water, using the brush to get off all the bits of wax. Then scald with boiling water, again using the brush. Drain off the water and set in the sun to dry. Cover with heavy muslin cover to keep out dust, and it is all ready to use the next time it is wanted. The one washing at the close of the season is enough here, if the extractor is kept perfectly covered between extractings.

### Cellar Wintering

I have been reading about Dr. Miller in the American Magazine. I'll soon be 16, but I've already decided what I'm going to do when I'm grown, and that is to raise horses, hogs and bees. So I was naturally very much interested in what was said concerning bees. I suppose by this time you are wondering what I want. Well, it's this: It mentions that bees cannot stand cold weather. So you place them in the cellar and heat it artificially. What temperature do you heat this place? You see when I start out I want to profit by what's been found out before me. You would laugh if you could see the amount of stuff I have collected. But I hope to put it to good use soon.

HELEN COULSON.

Very careful experiments by Dr. Phillips, the man in charge of the interests of beekeepers at Washington, have shown that a temperature of about 57 degrees in the hive is what the bees like best for good wintering. Of course, one cannot always keep the temperature of a cellar at a given point, and there are a good many cellars where it sometimes reaches the freezing point. That will do if it is only occasionally and for a short time. But a continued freezing temperature would not do at all. Some means should be used to keep the temperature not below 50 degrees, although bees have wintered well at 45.

Instead of having to keep the cellar warm enough, the effort may be to keep it cool enough, if there is a furnace in the cellar. Then in some way enough cool air must be let into the cellar, without letting in any light, to keep the temperature somewere from 50 to 55, perhaps occasionally running up to 60.

Now, if you think you know just how to run a bee cellar successfully, it may be as well to tell you that as far south as you are you should hardly winter bees in a cellar at all. At Hamilton, Ill., the home of the American Bee Journal, the Dadants have decided it is better to winter bees outdoors. They are a little north of the parallel of 40 degrees. You are a little south of it. So it's pretty plainly outdoors for your bees.

You are very wise to read up in advance about bees, and you should have Dadant's Langstroth or some other good text-book to study. Then, as soon as you can get them, start in with not more than two colonies of bees to practice with.

### Ants—Bees Not Working

On a super I noticed a number of ants between outside and inside cover, also that the bees had completely covered the little square space in inside cover, which is screen wire, with propolis. I removed that, thinking it would give them more air. Did I do wrong? Do you think they had filled the screen with propolis to keep the ants out?

I looked at the bees again, July 29, expecting to find the super filled or at least find them busy in it, but to my surprise they were not working at all.

Would the ants hinder from working? Could it be that they have no queen?

Where can I obtain a good breeding queen, and which stock would you advice, the three-banded or the Golden Italians.

What is the value of an apiary of about 100 colonies of Italians and hybrids in 10-frame hives and an extra hive for each? The colonies are mostly all strong. Would like to have your recipe for queen cage candy.

KANSAS.

You are referred to the advertisements of the American Bee Journal for obtaining good queens, as all of them are supposed to be reliable. The three-banded Italians are generally preferred.

The question as to what you can realize from an apiary of 100 colonies, is one that no one can really answer. It is a good deal as is the case with almost any business that can be mentioned. Some merchants make a fortune, some make a failure. Something depends on the locality. One location may be good and another poor, so that the same beekeeper would make three times as much in one location as in another. Very much depends on the individual. One of experience may do well where a green hand would fail. A beekeeper full of energy may do three times as well as a lazy one. It is a possibility— a possibility, mind you,—that an able beekeeper in a good year might average 200 pounds from each of 100 colonies. If he should sell that honey at 25 cents a pound he would get $5000 for his crop. Then it is possible that the harvest might be an entire failure the next year, leaving the beekeeper out of pocket the amount he would have to pay for feed.

Now after thus evading any direct answer so far, it may be well to give a quotation from Productive Beekeeping, by Frank C. Pellett. The experienced and able editor of that book says, page 17: "After gathering the average results from a number of beekeepers who have kept bees for many years, it seems safe to place the average return in the average locality at five dollars per colony in the hands of expert beekeeper." That, of course, would make $500 from 100 colonies. But at the high prices of the last two years that figure might be doubled.

To make queen candy, take best quality of extracted honey; heat but not boil, and stir into it all the pulverized white sugar (not confectioner's sugar with starch in it) it will take; then work in all the sugar you can by kneading with the hands. Let stand two or three days, and again knead in all the sugar you can.

# DR. MILLER'S ANSWERS

### Doctor Miller to Have a Rest

Readers of this department will please note that Doctor Miller is not as well as usual and refrain from sending letters direct to him for the present. The editors will do their best to answer such questions as are sent to the American Bee Journal until such time as Dr. Miller is able to resume his work. Although it will be a disappointment to many of our readers to find their questions unanswered by the good Doctor, we must remember that he is eighty-eight years of age, and few men have been able to carry on their work without interruption to such a ripe old age. He is certainly entitled to a vacation, and we are hopeful that he will soon be quite himself again.

All questions to be answered should be mailed direct to this office until further notice.

### Stings

I had a horse that got into my apiary and got stung very badly and died. What could I have done for treatment in this case. Is there anything I could have used to ease the pain?

NEW JERSEY.

ANSWER.—I'm afraid I cannot help you much. The first thing, of course, is to get the horse away from the bees, preferably into a dark stable. It might be worth while to scrape off the bees with a curry-comb to get rid of some bees that are burrowing in the hair but have not yet stung. I have read of

covering the horse with a very wet sheet to ease the pain, which at least would do no harm.

### Swarm Control

What do you think of the plan of swarm control outlined by F. R. Smythe, of Cincinnatti, Ohio, in the August issue of the American Bee Journal? It has occurred to me that the bees would raise a young queen in the side hive, or start queen-cells, and those in the present hive would swarm out with the old queen. Do you think there is any advantage in this plan over leaving the two hive-bodies one on top of the other? IOWA.

ANSWER.—I find it difficult to understand the article in question found on page 266 of the August number. I think, however, that the main thing is that every 10 to 14 days the brood is taken from the brood-chamber and put into an adjoining hive, there being communication between the hives, the removed combs being replaced by combs that contain no unsealed brood. In effect this is the same as using the Demaree plan every 10 to 14 days, and should be effective in preventing swarming. The only question is whether it is easier to have this hive-body at the side or on top, and unless it can be shown to be easier having it at the side, there can hardly be any advantage in the proposed change. Cells would no doubt be started, as you suggest, but there might be no swarming. At any rate the cells could be killed at each change.

### Queens—Hives—Kodaks

1. Do you advise me to breed from a hybrid queen whose progeny works on red clover after a wet spell when the corolla tubes are long? Her bees also gathered surplus last year when the others almost starved.

2. Which hive would you prefer the 10-frame story and a half hive, or the 13-frame hive, run for extracted honey?

3. How do you fasten queen-cells to a nursery frame?

4. I am thinking about buying a kodak. What kind do you advise me to get for bee pictures?

5. What was the number of the kodak used for pictures in "Fifty Years Among the Bees?"

6. How were Figs. 48, 49 and 52 taken? Did you have to use a flashlight? VIRGINIA.

ANSWERS.—1. If you have much red clover it might be well to breed partly, at least, from the red-clover queen, even though she be hybrid.

2. Hard to say; perhaps the 13-frame.

3. Just lay the cell on its side in the compartment, and it will be all right.

4. The Eastman kodak A 1 does good work, and there may be others just as good.

5. It was Kodak A 1. I think is cost $12, but would be higher now.

6. No, those were time exposures.

### Feeding

When feeding bees warm sugar (cane) syrup in proper proportions, immediately after feeding, a good many dead bees are carried from the hive. In pressing these between the fingers they disgorge the syrup they have eaten. I am using the Alexander feeder and I am feeding my bees in daytime. Up to date I have found no solution. MICHIGAN.

ANSWER.—I think the thing you mention is more common than generally supposed, and I don't know how to account for it. It would seem that there should be no quarreling among the bees of the same colony working upon feed to which no other bees have access, yet I know it sometimes happens, without knowing why.

### Increase

As my bees had no inclination to swarm this year, I would lik to make increase the next season and have been wondering if following plan would be safe, or if I would only be sacrificing queens:

1. Divide strong colony about the 20th of May, raising half above (5 frames) over excluder, putting sheet over the lower five frames of brood, completing isolation as much as possible without interfering with free intercourse with above super, to which I would introduce a laying queen.

2. Would both stories build up in time for clover flow, which begins about July 1? CANADA.

ANSWER.—If understand correctly, you mean to let the two parts remain separated by the excluder till clover harvest. I'm afraid in too many cases you would find one of the queens missing.

### Bees Leave Hive

I had a colony of black bees which I Italianized. Later the queen and all the bees left the hive, leaving behind both brood and eggs. Can you tell me what made them leave and will this hive of combs do for bees again next spring? NORTH CAROLINA.

ANSWER.—It is possible the bees deserted the hive because lacking honey or pollen, or both. This sometimes happens.

The combs will be all right for a swarm next year provided "worms" do not destroy them in the meantime. But you cannot depend on keeping moths out by keeping the hive closed, for the eggs are there already. Fumigate the combs, and then again two weeks later, and then you may trust to keeping the hive closed tight.

### Balling Queens

In the latter days of July as I was carrying two frames of brood which I had cut out of an old box hive, to give to the colony which I had transferred. I noticed a swarm passing over. I used a method I had found effective before and got them to cluster on a small peach tree about eight feet from the ground. Using the two frames of brood in the hive to hold them I proceeded to get them into their new quarters. The queen did not go into the hive so I placed her on the frames. Immediately she was balled. I released her from the balling bees and dipped her in honey and placed her on one of the frames of brood and closed the hive. She was missing the next day, and in due time five cells were capped over on the transferred brood. They killed that queen and I introduced another and the colony will go into winter in good shape. It was evidently an absconding swarm, as the queen was a layer. Inspectors were busy treating for American foulbrood and swarms were busy moving out. The puzzler to me is, why did they ball the queen. An answer in the Am rican Bee Journal will be appreciated. KANSAS.

ANSWER.—You placed the queen on the frames, and in doing so you may have given her a strange odor to which the bees objected. Maybe that's the right answer and maybe it isn't.

### Moving Bees

I have a hive of bees which is now within about fifteen feet of the line which will have to be traversed by horses in doing some excavating which I contemplate doing early next spring. The bees are Italian bees. Will there be danger of the horses working so close to the hive? There is another place one hundred feet away to which I can move the hive if necessary. Would it not be best to move the hive during the winter season by taking it bodily from its present place? ILLINOIS.

ANSWER.—There would be danger of the bees stinging the horses, especially if they face towards the passage of the team and there are no obstructions, such as trees or brush, in the way. You might build a tight board fence in front of the hive. But it would probably be preferable to move them as you suggest. Better do it soon, so they may learn the new place before cold weather. If you move them on a cold day, there is a possibility of many of them being lost at their first flight. Move them soon, in the morning of a good day for them to fly. Disturb them thoroughly, so they may know that something is wrong. When you release them, put a slanting board in front of the entrance so that they may notice at once that something has been changed. They will then be more apt to recognize the place and come back to it. If they are thoroughly disturbed, very few will fail to return to the new place, since they will have taken notice of the change. More bees are lost, likely, when the hive is moved 100 feet or less than when moved several miles, out of the range of their flight.

### Foulbrood

1 My dad has cut down many bee-trees, and he says he has found them and their brood all healthy. Now, how is it, that when you take the bees out of the trees and put them into modern up-to-date hives, they take the disease?

2. Do you think putting the diseased hives into hot lime water would kill the disease? CALIFORNIA.

ANSWERS.—1. If your dad had transferred the bees from the log to the movable-frame hive fifty years ago and had kept them without a trace of disease until two or three years ago, would he still accuse the movable-frame hive of being the cause of the disease?

2. There is a much quicker way to treat the hives than a bath of quicklime; it is to paint the inside of them with a little coal oil and set fire to them, allowing them to burn only a few seconds. Still better is to borrow a gasoline torch from a tinner and throw a blaze on every part of the wood, so as to singe it. But lime will probably do, if you prefer that way.

### Moths

Will you please tell me what I can do about moths cutting up my drawn comb? I extracted about the first of September and put my supers with drawn comb in storeroom upstairs, in my house. Nothing else in the room. A week later I looked them over and found some big and some small wax moths cutting up my drawn combs. I killed as many as I could find. MINNESOTA.

ANSWER.—Either use brimstone wicks, that you can buy from the druggist, and burn a piece about 3 inches each way, in a crock or clay vessel, under the combs, in a closed room. This should kill not only the moths, but the flies in the room. If the room is too large you should use more brimstone. Or you can also use carbon-disulphide, but this explodes if you bring a light near it. Dip a piece of rag in carbon-disulphide and lay it over the combs, closing up the super. It will evaporate and kill the moths. You should repeat the dose in a couple of weeks to kill the hatched eggs.

### Wiring—Hive Roofs

1. This season I wired a few frames (Dadant) with the regular number of horizontal wires and with one perpendicular wire. This wire passes through a small hole in the upper bar and is secured to a small nail beside the hole. This wire makes a turn around each horizontal wire and is then fastened to the lower bar. This seems to wholly prevent foundation from sagging down. What is wrong with this simple scheme? I can't see what it is, but I know there is something, or else you and the Dadants would use it.

2. I would like to ask the Dadants what they would think about using surplus foundation in the extracting frames and wiring the frames? If my bees use any of the wax that is in light brood foundation in making the cells it is such a small amount as to be unnoticeable. I have scraped the cells off of some combs that were built on light brood and the foundation looks just the same as when put in the frame, and I think it would weigh as much, or more.

3. In the back of Dadant's catalog, in that picture of one of your out-yards, what are those things laying on top of each hive? WISCONSIN.

ANSWERS.—1. That method is all right. Each

man has his own way, and yours is good.

2. We have never used thin surplus foundation in extracting frames, but it would probably do if it is wired. The electric wiring tool would be excellent for this.

3. Roofs, to protect the center of the cap from the sun and rain. They are made of rough lumber and those in the picture are rather smaller than the average.

### Miscellaneous

1. Do you believe that bees produce wax in the average clover flow in an involuntary manner?

2. If one has two-thirds of the necessary combs to hold his crop, how much honey will it cost him to draw the other third? Extracted honey being produced and full sheets used.

3. Do you know of any objection to the use of sappy yellow pine for shallow supers and frames? Some of the sap yellow pine being lighter than cyprus, and nearly as light as white pine.

4. Do you believe that one pound of sugar syrup, made two to one, is the equivalent of one poun of good honey for winter food?

5. Do you believe that well-ripened clover honey should stand a few days in open tanks before being canned and sealed? I had some sour, and a beekeeper of long experience said it was because it had been sealed in cans within a few hours after being extracted. (I believe he is wrong.) OHIO.

ANSWERS.—1. It is quite probable that bees produce more or less wax involuntarily, when they are compelled to remain filled with honey for days. Field bees produce but little wax if they are able to unload their honey sac at each trip.

2. I don't know. That is a question which is more or less speculative, as much depends upon crop conditions.

3. Sappy yellow pine is all right, where it can be used without splitting and where it is not exposed to moisture.

4. Yes, very nearly.

5. If it is *well-ripened* there is no need of its being kept in open tanks. But was this well-ripened? If not, standing in an open tank in a warm, dry spot, would have tended to improve it.

### Clipping Queens

1. Would you advise cropping a queen's wings to prevent her absconding with a swarm where the apiarist has to be absent part of the time? If so, would you crop one or both wings, and how much would you clip off.

2. Would her wings ever grow back normal again?

3. Wouldn't the queen, after having her wings cropped, crawl out on the ground with her swarm, and would she be likely to enter an empty hive if one was placed 6 or 8 feet away, and in front of the parenthive?

4. On September 11 I hived a nice swarm of bees. Do you think they will make enough honey to sustain them till spring? MISSOURI.

ANSWERS.—1 Yes. One wing is sufficient.

2. No, they never grow again.

3. Usually when the queen is on the ground, a number of bees accompany her and try to protect her. She might enter an empty hive, but would not be likely to do so, unless some of her bees directed her in that direction.

4. That is a question that you are better able than anyone else to answer. Examine that colony, and if it does not have enough, feed it.

### Wintering—Large Hives

1. I intend to put my bees in good double-walled hives. Then put them in a shed with a roof, and north and west wall, to protect them from cold winds. Could the hives be packed row upon row upwards?

2. Would this be enough protection, considering my location, it being Milwaukee?

3. I have read articles endorsing the Jumbo Langstroth pattern. Now, I have spoken to a well-known Wisconsin beekeeper about them in regard to swarming, etc, stimulating breeding. He claims that unless a colony is quite strong in the spring, they will not breed up as fast in the Jumbo hive as in a 10-frame standard hive (regular depth.)

4. What feeder do you advise for fall feeding, for winter stores? WISCONSIN.

ANSWERS.—1. Your proposed method looks good. You can pack your bees row upon row, but the more bees you will put in a small space, moving them from their summer stand, the more danger there will be of "drifting," that is of the bees of weak colonies joining the strong colonies. The reason is that, when they are moved they have to learn their location again, and in the excitement of the change a great many young bees go where the biggest noise is made.

2. I think so.

3. Your advisor is right. But it is probable that colonies in large hives will be stronger to begin with, in the spring, than those in smaller hives. In that case they will breed as fast or faster in the larger hives.

4. Use the Miller feeder, or any of the inverted can feeders over the brood combs.

### Starter-Cells, Etc.

1. Do bees generally build satisfactory combs in Jumbo frames with 1-inch comb foundation starters?

2. Do you think a cellar under a dwelling, brick walls, cemented on the inside and bottom, perfectly dry, temperature from 55 in early part and 40 in severest part of winter, a good place to winter bees?

3. Would packing do much good where temperature may go to 12 below zero for a few days; if so, how much would be satisfactory?

4. Is lispedeza (Japan clover) any good as a honey plant?

5. Do you think three-eighths of an inch space between frames sufficient for wintering, or would it be better to remove one frame to give room for clustering, or remove one and spread the rest farther apart? KANSAS.

ANSWERS.—1. No; no matter what kind of frame be in use, there will almost certainly be too much drone-comb with a 1-inch starter.

2. They may do very well if that 40 degrees doesn't hold too long at a time.

3. Yes; 3 or 4 inches of packing would be a good thing, but a good cellar would probably be better.

4. I think so, but have had no experience with it.

5. That depends. If top-bars are 1⅛ wide, then ⅜-inch space between them is enough. In general, if there is only a distance of 1⅜ inches from center to center of frames, then it may be better to arrange in some way for wider spacing.

### Shade Vs. Sunshine

I have been told by some beemen that it is better for bees to be out of the sunshine in a shady place; that this was the best method; but I see that most prominent beemen have their bees out in the sunshine. Will you please advise me which is the best? ALABAMA.

ANSWER.—I wouldn't like to be positive about it. I have been under the impression that most beekeepers preferred the shade. In this locality, at least, the bees seem more comfortable in the shade, and I'm sure the shade is more comfortable for the beekeeper when he is working at them.


### Western New York Beekeepers Meet

The Western New York Honey Producers' Association will meet at Genessee Hotel, in Buffalo, on Friday and Saturday, November 14 and 15. R. F. Holterman, of Ontario; George H. Rae, Cornell University, and E. Victor Underwood, of Erie Farm Bureau, are among the speakers already secured.

### Iowa Convention

As we go to press announcement is received that the annual convention of the Iowa Beekeepers' Association will be held at Des Moines on Monday and Tuesday, November 10-11. Program had not been completed at time announcement was received, but full information, together with program, will be sent to all who apply to F. B. Paddock, State Apiarist, Ames. Iowa.

### New Bee Inspector for Arizona

Arizona has a new bee inspector, appointed by Governor Thomas E. Campbell. The new man is Earl L. Matteson, of Benson, who succeeds Peter Benson, of Buckeye, resigned. Matteson is one of the biggest beemen of the State himself, being interested in the business with Charles A. Goetz.

There is still pending in the courts a pair of suits against the State Auditor for the collection of the salaries of the two last State Bee Inspectors, each of whom contend that he is entitled to the money for his salary, when there is only enough money in the fund to pay one of them.—Phoenix Republican.

### Bee Club Organized

With the organization of the Liberty Bell Bee Club in Pasco, Wash., there has been launched what is intended to become a statewide and perhaps a national institution. The corporation is planned to increase the production of honey and stimulate the saving habit and to provide an educational fund to assist worthy students in need of help in securing a higher education.

The mother apiary of the organization will be started in Pasco, the work being under the supervision of L. S. Crossland. Plans call for the raising of $2,500 capital in this country, and Mr. Crossland will guarantee 8 per cent return on the money invested. As soon as the stock has been sold other apiaries will be established at other points and the capital stock increased, eventually spreading to all parts of the State. It is provided that one-half of all earnings over and above the initial dividend shall be paid into an educational fund to be controlled and used in accordance with the by-laws of the organization.

Spokane, Wash.

## Beekeepers' Exhibit at the Chenango County Agricultural Fair

Realizing the fact that to keep the price of honey where it rightly belongs, so that the producer may secure a fair return for his labor and interest on the money invested for bees and equipment, we must increase the demand by increasing consumption, the place to start to advocate the more general use of honey is at home, so the Chenango County Beekeepers' Society staged one of the most interesting features of the Chenango County Agricultural Fair at Norwich, N. Y., August 26, 27, 28 and 29, under the direction and supervision of the society.

There was a large display of bees in observatory hives, comb and extracted honey, beeswax, cakes, cookies and doughnuts made with honey; berries and fruits preserved with honey; jams, jellies and marmalades made with honey, and a good display of apiary appliances.

The Secretary was on the job each day with a committee to answer questions, talk honey and hand out samples.

We had on display several frames of honey, that were contributed by the different members of the society, to be extracted and handed out as samples during the fair.

At different periods we would demonstrate how the combs were uncapped and the honey thrown from the combs with the extractor. The combs were displayed before and after extracting. At the same time we would explain the difference between comb and extracted honey, also the difference between extracted and strained honey.

The honey, after being extracted, was strained through cheese cloth into a specially prepared can with a small gate, the samples of honey were handed out by placing small round crackers on a small platter and about a half a teaspoon of honey deposited on each cracker. This made a very suitable and delicious sample. As fast as the samples were handed out we uncapped and extracted a new supply.

During the four days of the fair we handed out about 150 pounds of honey as samples. One day we handed out about 2,000 of Dr. Miller's leaflets, "Food Value of Honey."

We did not go to the fair to sell honey, as this season's crop in this county is nearly exhausted; we went to advertise.

One exhibitor showed a 5-pound tin pail and a 1-pound glass jar, each container costing about the same price.

He was boosting the large package claiming that it was a good family size and that it did not cost any more to sell than a 1-pound glass jar, and the consumer got the benefit of the lower price. The tin had another advantage over the glass, as there was no breakage in handling, shipping or liquefying.

Thursday was beekeepers' day and there were many practical demonstrations for the benefit of beekeepers.

While this is a county fair, it was surprising how many were present from other States, and how much interest was displayed in our exhibit and talks on honey and its uses. It was also surprising how few ever heard of extracted honey or knew how it was produced.

We feel that we have given honey a boost and have done some good advertising that will be of great benefit in helping the sale of honey in this locality, and that it will be the means of placing honey on the tables of many families that have always thought of honey as a luxury, instead of a healthful food.

CHENANGO COUNTY BEEKEEPERS' SOCIETY.

### Illinois Convention

Illinois beekeepers will meet at Springfield on December 9 and 10. Headquarters will be at the Leland Hotel. The program will be sent direct from the Secretary, J. A. Stone.

### Ontario Beekeepers to Meet

The Ontario convention will be held at the Carlsrite Hotel, in Toronto, on November 11, 12 and 13. The fruit and flower exhibition will be held at the same time, and an exhibit of honey will be combined, as in the past. An excellent program is in prospect.

### Eastern New York Meeting

The Eastern New York Beekeepers' Association will hold their twelfth annual convention in the Supervisors' room in the Albany County Court House, at Albany, N. Y., on Thursday, Nov. 20, 1919.

Prof. Geo. H. Rae, Extension Specialist in Apiculture, and other live beekeepers are expected to be present and address the meetings.

Sessions at 9:30 a. m. and 1 p. m.

STEPHEN DAVENPORT, Sec'y.
Indian Fields, N. Y.

FOR SALE—New crop clover extracted honey, two 60-pound cans to case, 25c per pound. Buckwheat and clover mixed, about half and half, 20c per pound.
H. C. Quirin, Bellevue, Ohio.

FOR SALE—4,000 lbs. of extracted honey, mesquite blend, in new 60-lb. cans, two cans to case. Also, 1,200 lbs. same as above in half-gal. and gal. cans. Best offer takes it. F. O. B. Three Rivers, Tex.
Chas. Heim & Sons.

OUR CROP OF HONEY is now ready for shipment. It is a good grade white clover with a very small trace of basswood, almost water white. It is put up in new 60-lb. tin cans, two to the case. This honey was all produced by ourselves above queen-excluders, in nice white combs. Then combs were provided so that no honey was taken off until after the season, when it was thoroughly cured by the bees. It costs more to raise a crop of honey this way, as we do not get as much per colony, so we have to have a little more money for this fancy article than the ordinary honey on the market. Try a small order and we feel sure you will buy no other.. We can furnish at the following prices, f. o. b. Northstar: one 60-lb. can $15.50; in cases of two cans, $30 a case, in any sized orders. The crop is short this year and will not last long at these prices. We feel quite sure that the price will not be any lower, so do not be disappointed by not ordering early if you are looking for honey as good as money can buy.
D. R. Townsend, Northstar, Mich.

FOR SALE—Extracted clover and buckwheat honey. Let us quote you.
The Forest Honey Co.,
2323 S. Woodstock St., Philadelphia, Pa.

WANTED—White clover or light extracted honey. Send sample; state how honey is put up and lowest cash price delivered at Monroe; also buy beeswax.
E. B. Rosa, Monroe, Wis.

WANTED—Comb and extracted honey; send sample of extracted and quote your best wholesale price f. o. b. your station, how packed, etc., in first letter. D. A. Davis,
216 Greenwood, Birmingham, Mich.

WE BUY HONEY AND BEESWAX—Give us your best price delivered New York. On comb honey state quantity, quality, size, weight per section and sections to a case. Extracted honey, quantity, quality, how packed, and send samples. Chas. Israel Bros. Co.,
486 Canal St., New York, N. Y.

WANTED—Honey, in light and amber grades. Send sample, stating quantity, how put up, and lowest cash price delivered in Spring Valley. Ed. Swenson, Spring Valley, Minn.

FOR SALE—15,000 pounds of fine clover and basswood honey. The best offer takes it if satisfactory. Chester E. Keister, Clarno, Wis.

WANTED—Comb, extracted honey and beeswax. R. A. Burnett & Co.,
6A13t 173 S. Water St. Chicago, Ill.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering. Fred W. Muth Co.,
304 Walnut St., Cincinnati, Ohio.

## FOR SALE

BEELINE Honey, nature's best wild flower blend; 20 lbs. $7.50.
Lorenzo Clark, Winona Minn

FOR SALE—60 perfect worker combs in Hoffman wired frames on full sheets of comb foundation, in 6 full depth supers; price $15. Ten supers for 10-frame hives, filled with section holders for 4¼x1⅞ sections, 50c each. Edwin Bevins, Leon, Iowa.

FOR SALE—Selling out bee supplies at 50 per cent less than present prices. Write for list. Hunkel Co., Milwaukee, Wis.

FOR SALE—Cedar or pine dove-tailed hives; also full line of supplies, including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash

FOR SALE—300 colonies bees, with complete equipment for extracted honey; no disease here. J. O. Hallman, Helena, Ga.

CLOSING OUT SALE—An opportunity to enter another line of business has presented itself and I have decided to retire from the queen and bee business. I have probably the best outfit in Louisiana for the queen and package business, located in 3 yards in Avoyelles Parish, the best known bee section in the State. We have a live Parish Beekeepers' Association, and a State Association has recently been organized. I offer 400 colonies Italian bees, 8-frame, 2 stories, first class. Portable power extracting outfit, engine and power saw, together with supplies of all kinds on hand. This is complete and going business, profitable and ready to work. Best quality, and the outfit represents 5 years of careful painstaking effort. Business now on book for spring delivery. Delightful climate. Price $3,000. I am solvent; no forced sale. Correspondence only with those who mean business is desired. No lease or share deal considered. J. F. ARCHDEKIN,
Big Bend, La.

FOR SALE——200 new 10-frame cross style, reversible bottom-boards at 50 cents each; 200 new flat reversible covers at 60 cents each; 5,000 all-wood extracting frames at $5 per 100; 100 new Alexander feeders at 20 cents each; 150 Boardman feeders without cap or jar, at 12 cents each. All above goods are factory made and have never been used. I also have some 8 and 10-frame hives complete which space does not permit to mention here. Write M. E. Eggers, Eau Claire, Wis.

BLACK SIBERIAN HARE—World's greatest rabbit for fur and meat. Write for information.
Siberian Fur Farm, Hamilton, Canada.

FOR SALE—Phot. of L. L. Langstroth, inventor of movable-frame hives, size 7x9; price, $1. American Bee Journal,
Hamilton, Ill.

FOR SALE—"Superior" Foundation (Weed process). Qualit and service unexcelled.
Superior Honey Co., Ogden, Utah.

## WANTED

WANTED—To buy comb honey, either amber or white. Edw. A Winkler, Joliet, Ill.

WANTED—To buy small honey extractor.
E. D. Chandler, Casa Grande, Ariz.

WANTED—Iron mortar and pestle for cracking crockery for poultry. Address
G. R. Richardson, Princeton, Ill.

WANTED—Comb and extracted honey, light and amber and clover grades.
Robert Gilkinson,
1339 Dewey Ave., Rochester, N. Y.

WANTED—Man for comb-honey production; 12 months' work. State wages expected and experience. Sunnyside Apiaries,
Fromberg, Mont.

WANTED—Your old combs, cappings or slumgum to render into beeswax by our high steam pressure wax presses.
Dadant & Sons, Hamilton, Ill.

WANTED—Your order for "Superior" Foundation. Prompt shipments at right prices.
Superior Honey Co., Ogden, Utah.

WANTED—I have a fine location in California and want a man to associate himself with me in the beekeeping business. I have the stock of bees and equipment here in Arizona; wish to ship all to a certain point in California this fall; have an attractive proposition to offer the right man that can invest in half interest in what I have. Tell your story in first letter.
J. B. Douglas, Box 1085, Tucson, Ariz.

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FOR SALE—Good second-hand empty 60-lb. honey cans, two cans to the case, at 60c per case, f. o. b. Cincinnati; terms cash with order. C. H. W. Weber & Co.,
2146 Central Ave., Cincinnati, O.

MY FEEDER—Make 'em yourself. I tell you how. Won't rust. Sample and tool postpaid, 24c. Dr. Bonney, Buck Grove, Ia.

FOR SALE—Beehives and supers. Address Thos. Cordner, Rt. 7, Sparta, Wis.

NEW HONEY CANS—Two 5-gallon cans in a cleated-end case, direct from the factory to you at $1.20 per case, f. o. b. your station.
Edw. A. Winkler, Joliet, Ill.

SEND us a list of goods wanted and will quote you lowest prices. We are the money-saving house. Price list free. Try us.
H. S. Duby & Son, St. Anne, Ill.

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WANTED—Two experienced beemen for the season of 1920. One queen-breeder with experience, one with experience in handling bees. State age, number of years experience and wages. Also give references.
W. J. Forehand & Sons, Ft. Deposit, Ala.

## MISCELLANEOUS

FOR SALE—Remington automatic rifle, 22 calibre, excellent condition, $25; used 3 months. Will take an extractor or bees in trade.
Thos. H. Cordner, Rt. 7, Sparta, Wis.

AMERICA'S UNIQUE PUBLICATION

The Youth's Companion prints week after week the best of everything that is worth while, and for every age. No other source will give your family what The Companion furnishes, or so much for the price—less than 5 cents a week.

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No family should miss the pleasure of reading the delightful serial stories by Elsie Singmaster, Capt. Theodore G. Roberts, and others, to be published during the next year. If you subscribe at once you will receive all the extras mentioned in the following offer:

New subscribers for 1920 will receive:
1. The Youth's Companion—52 issues in 1920.
2. All remaining weekly 1919 issues.
3. The Companion Home Calendar for 1920.
All the above for $2.50.
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Commonwealth Ave., & St. Paul St., Boston, Mass.
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I WANT to trade honey for a good-toned guitar. Must be in good order.
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Grand Haven Pattern Works,
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FOR SALE — California Wonder corn for seed. A new white dent; has averaged as high as six good ears per stalk. The greatest yields of any corn known. Order now. Price, 10 pounds, $3.50.
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THE DOMESTIC BEEKEEPER is published "wholly in the interest of the honey producer." It will help you to produce more honey, and then help you to sell it for the best price. Published monthly, $1 per year. Send for sample copy and list of liberal clubbing offers. Address The Domestic Beekeeper, Almont, Mich.

WANTED—Beeswax, old combs and cappings to render on shares. Will pay highest market price and buy your share of the beeswax.
F. J. Rettig & Sons, Wabash, Ind.

**Statement of the Ownership, Management, Circulation, Etc.,** required by the Act of Congress of August 24, 1912, of **American Bee Journal,** published monthly at Hamilton, Illinois, for November, 1919:

STATE OF ILLINOIS, ss.
COUNTY OF HANCOCK.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared V. M. Dadant, who having been duly sworn according to law, deposes and says that she is the Business Manager of the American Bee Journal, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

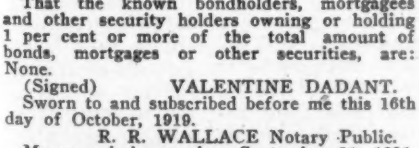
1. That the names and addresses of the publisher, editor, associate editor, managing editor and business managers are:
Publisher, American Bee Journal, Hamilton, Ill.
Editor, C. P. Dadant, Hamilton, Ill.
Associate Editor, Frank C. Pellett, Hamilton, Ill.
Managing Editor, M. G. Dadant, Hamilton, Ill.
Business Manager, V. M. Dadant, Hamilton, Ill.

2. That the owners are:
C. P. Dadant, Hamilton, Ill.
H. C. Dadant, Hamilton, Ill.
V. M. Dadant, Hamilton, Ill.
Leon Saugier, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
Jos. Saugier, Hamilton, Ill.

That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgages or other securities, are: None.

(Signed) VALENTINE DADANT.

Sworn to and subscribed before me this 16th day of October, 1919.
R. R. WALLACE Notary Public.
My commission expires September 21, 1921.



PAT. JULY 30, 1918

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Booking orders now with 10 per cent down, balance just before shipping. For full remittance with order offer the following discounts: 5 per cent for October, 4 per cent for November, 3 per cent for December, 2 per cent for January. We have shipped for several seasons thousands of pounds all over the United States and Canada. Guarantee shipment to be made on time. Free Circular explains, also gives prices on Bees by Parcel Post, Nuclei, etc.

Prices F. O. B. here, by express.

1 pound package bees, $2.40 each; 25 or more, $2.16
2 pound package bees, $4.25 each; 25 or more $3.83
3 pound package bees, $6.25 each; 25 or more, $5.62
Add price of queen wanted when ordering bees

QUEENS

Untested, $1.50 each; 25 or more $1.35.
Tested, $2.50 each; 25 or more, $2.25
Select Tested, $3 each.

**NUECES COUNTY APIARIES** E. B. AULT, Prop. Calallen, Texas

# Crop and Market Report

Compiled by M. G. Dadant

Since our last report other information on the crop has come that would tend to show that it is better than anticipated. According to the Government report it seems to be a little better than last year. The fall producing sections have reported very good honey crops in these localities, which has helped bring up the average.

## HONEY PROSPECTS

A good fall crop usually indicates that the prospect for the next year will be good and this seems to be the rule over most parts of the country. Fall rains have tended to balance up the earlier drought during summer, although in many localities the clover still seems to be pretty well burned out and not showing much on the hills.

## DEMAND FOR HONEY

The demand for honey continues good and should, in view of the shortage of sugar. This demand should continue strong at least until after the holidays, as it is doubtful whether the sugar shortage will be alleviated until later on during the early spring months.

We would suggest, however, that the parties who still have honey to sell get rid of a bulk of their honey before the first of the year, while prices and demand are strong. The candy manufacturers and many other manufacturers of sweets do not seem to be returning to honey as a substitute yet. Evidently such large manufacturers were well stocked ahead of time with supplies of sugar and are not requiring such large quantities of honey.

Of course, with the individual user the occasion is different. Many are buying honey because they cannot procure sugar at all. In most localities the effect of lack of local advertising is seen. Many parties wishing sweets are unable to get any and have not had honey placed before them in a sufficiently attractive manner to warrant their buying to any extent.

## PRICES OF HONEY

In a wholesale way the prices of honey have gotten a little stiffer within the last month. Prices on the Pacific Coast, as quoted by commission merchants, now range from 1 to 2 cents per pound higher than during our last report. These prices are guaranteed against decline until November.

Although honey will remain in demand, we doubt whether there will be a large increase in price, and believe that a price of 20c for white extracted honey is not far below what is proper. In fact there are many lots still waiting buyers and which are offered from 17 to 19c per pound f. o. b. shipping point, which would make about 20c per pound f. o. b. the larger markets of the country.

## SUGAR SHORTAGE ACUTE

Beekeepers in many localities are confronted by a serious situation in being unable to secure sugar to feed their bees. Since the lifting of the ban on sugar following the close of the war, the country has used far more sugar in a period of nine months than ever before in an entire year. The coming of prohibition is making many new demands for sweets of all kinds, which promises to be permanent. While this unusual demand promises a bright future for beekeeping, in that it tends to make higher prices for honey permanent, it has made it next to impossible for beekeepers to secure needed supplies for the coming winter.

The United States Sugar Equalization Board, 111 Wall Street, New York City, stood ready to supply the beekeepers, but were unable to do so, owing to the fact that they distributed sugar only in car lots.

An arrangement has recently been made whereby for all sugar used in territory east of a line between Pittsburg and Buffalo will be supplied with cane sugar, while all territory west of that line will take beet sugar. Beekeepers who live in New York State should write to George H. Rea, Extension Division, Cornell University, Ithaca, and state the amount required to feed for winter stores. Pennsylvania beekeepers should write to Prof. J. G. Sanders, Bureau of Plant Industry, Harrisburg, in similar manner. In these two States arrangements have been made to buy in car lots and distribute from convenient points. In other Eastern States the best the beekeepers can do is to organize and purchase car lots through the United States Sugar Equalization Board, Inc., 111 Wall Street, New York City. Beekeepers living west of New York and Pennsylvania can only write direct to the beet sugar refineries, a list of which follows:

Mount Clemens, Sugar Co., Mt. Clemens, Mich.
Owosso Sugar Co., Owosso, Mich.
Michigan Sugar Co., Saginaw, Mich.
Minnesota Sugar Co., Chaska, Minn.
J. H. Laws & Co., Cincinnati, O.
D. A. White & Co., 216 Elm St., Cincinnati, O.
Ohio Sugar Co., Ottawa, O.
Toledo Sugar Co., Rossfield, O.
Continental Sugar Co., Toledo, O.
Utah-Idaho Sugar Co., Grant's Pass, Ore.
Amalgamated Beet Sugar Co., Ogden, Utah.
People's Sugar Co., Salt Lake City, Utah.
Utah-Idaho Sugar Co., Salt Lake City, Utah.
Holly Sugar Co., Boston Building, Denver, Colo.
Pope, Charles, 332 S. Michigan Ave., Chicago, Ill.
Garden City Sugar and Land Co., Garden City, Kans.
Columbia Sugar Co., Bay City, Mich.
West Bay City Sugar Co., Bay City, Mich.
Michigan Sugar Co., Crosswell, Mich.
Continental Sugar Co., Detroit, Mich.
Holland-St. Louis Sugar Co., Holland Mich.
Western Sugar Refining Co., Marine City, Mich.
Sugar Refining Co., Menominee, Mich.
Chippewa Sugar Co., 428 Grand St., Milwaukee, Wis.
U. S. Refining Co., 428 Grand St., Milwaukee, Wis.
Wisconsin Sugar Co., 428 Grand Ave., Milwaukee, Wis.
Sheridan Sugar Co., Sheridan, Wyo.
Alameda Sugar Co., 310 Samson St., San Francisco, Cal.
Spreckles Sugar Co., 60 California St., San Francisco, Cal.
Santa Anna Sugar Co., Santa Anna, Cal.

The 1919 crop of beet sugar is just now becoming available. The beekeepers should save their bees at any cost, since honey bids fair to remain high through the coming year. Only granulated sugar should be fed for winter stores, since no other sweet is safe for this purpose.

The sugar situation for beekeepers is critical over much of New England, New York, Pennsylvania, the Carolinas and Georgia. Through Ohio, Indiana, Illinois, parts of Iowa, Minnesota and Michigan, similar conditions prevail.

The beekeeper who has honey on hand from colonies free from American foulbrood should at once feed all needy colonies and not risk being able to get sugar. This season, of all times, it is important that all bees be given special care in preparation for winter. Extra packing will save stores as well as bees.

Those who find their bees short of stores and are unable to buy sugar, should prepare them for winter under the most favorable conditions and prepare to feed later when sugar is available. If there be ten pounds of stores in the hives, the bees south of the Ohio River and Mason's and Dixon's line should be able to survive until March 1, at which time there should be sugar available for feeding.

Cellar-wintered colonies should be left until as near spring as possible, if they cannot be fed before going into winter quarters. Close watch should be kept that no colonies be allowed to starve for want of stores, and when the feeding can no longer be postponed, they should be fed according to the following directions:

From Farmers' Bulletin No. 695, page 12, Department of Agriculture:

"If honey in combs is not available, the bees may be fed extracted honey; but the usual practice is to feed a thick sugar syrup made of 2 or 2½ parts of sugar to 1 part of water, by volume. To this syrup 1 ounce of tartaric acid should be added for each 40 to 60 pounds of sugar while the sugar is being heated to the boiling point to dissolve the sugar crystals. The syrup should be boiled 15 minutes. The acid helps to invert the cane sugar, thus retarding its granulation in the combs."

# A GREAT NEW BOOK

—FOR—

# BEEKEEPERS

The American beekeeper has long been in need of a thorough knowledge of the honey plants of this country.

To know the sources of honey supply and the location of such sources, is indispensable to beekeeping success.

The American beekeeper is at last going to be supplied with this knowledge by the highest American authority on the subject of honey plants, Mr. John H. Lovell, scientist, author, and beekeeper.

## The Honey Plants of North America, North of Mexico, and Guide to the best Locations for Beekeeping in the United States

Is the subject of the book which Mr. Lovell has been preparing by life-long study and now about to be printed by us as his publishers and collaborators.

This new book will prove the most important contribution made to American beekeeping lore in years —literally filling "a long-felt want."

No brief description can possibly tell of the beekeeping ground covered by the author. Among the many subjects treated, will be found chapters on the "The Influence of Environment on the Secretion of Nectar," "Plants Valuable for Pollen Only," "Honeydew," "Plants of Little Value to Bee Culture." One entire part of the book will be given over to discussion of "Nectar—Its Secretion, Protection and Distribution." Another part will give the fullest and most finely illustrated description of North American honey plants ever printed.

Still another part (and perhaps the most important) will deal with the honey plants of different sections of the country and furnish a guide to the best locations for beekeeping.

All this big and valuable work for beekeepers has been done with Mr. Lovell's widely known scientific accuracy; but technical terms have been avoided, and the language used is that of the common beekeeper.

We congratulate the beekeepers of America upon the prospect of having the new aid and encouragement that this great new book will give to our beekeeping.

We are already at work upon its publication, and trust it will be off the press early in 1920.

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